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FINAL REPORT  
DEPARTMENT OF THE AIR FORCE  
in cooperation with  
WYOMING OFFICE OF INDUSTRIAL SITING ADMINISTRATION

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LARAMIE COUNTY TRANSPORTATION PLAN

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City of Cheyenne, Laramie County  
Wyoming Highway Department

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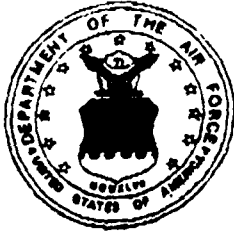
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## 1.0 Introduction

### 1.1 Project Background

This report documents the studies accomplished under the Cheyenne/Laramie County Transportation Planning Project dealing with 3 subtasks for Laramie County: (1) road inventory, (2) transportation plan, and (3) capital improvements program and maintenance plan.

The purpose of this report is to identify and deal with the impact on roadways maintained by Laramie County for deployment of the Peacekeeper system, an advanced land-based intercontinental ballistic missile system. Ultimately, 100 existing Minuteman III missiles will be replaced with 100 Peacekeeper missiles within missile squadrons located at F.E. Warren Air Force Base in Cheyenne, Wyoming. Installation of the Peacekeeper system is anticipated to occur between 1985 and 1991, subject to Congressional approval. Initially, 20 of the 100 missiles are scheduled for replacement between 1985 and 1986. Of these 20 missiles, 15 are situated in Laramie County.

### 1.2 Scope and Objectives

#### a. Road System Inventory

A road system review was conducted to assemble available information to determine the current status of roadways maintained by Laramie County. This review was supplemented by a physical field inventory of numbered county roads. Also, machine traffic counts were conducted at representative locations in the roadway system.

#### b. County Transportation Plan

Existing rural and urban roadway functional classification plans were reviewed for continuity. Roadway classifications were examined with regard to projected traffic demands to identify inconsistencies, if any.

An access map was developed to identify the optimum routing system for construction-related traffic between missile silo locations and major construction materials supply points (e.g., gravel pits, material supply depots, etc.). A traffic permitting procedure was also developed to monitor and control future Peacekeeper related construction traffic over county roads to missile silos.

#### c. Capital Improvements Program and Maintenance Plan

Past maintenance and construction programs were reviewed in terms of budgeting allocations and expenditures over the past 3 years. Current levels of maintenance equipment and staff were examined to determine capabilities to perform various types of work.

A maintenance priority schedule was developed for the county road network based upon existing conditions, projected traffic demand and desired condition.

A program for new roadway construction and major repair to support project related activity was developed for the county road network. Estimated annual costs for this program were prepared to identify any funding shortfalls.

### 1.3 Methodology

Road inventory format was developed and agreed upon through discussions with Mr. Bob Whitney who was acting on an interim basis as County Engineer. Road inventory was begun on September 18, 1984.

Data for the road system inventory was obtained from field observations while driving over numbered county roads. Mileage was measured to the nearest 0.01 mile using a "Trip Master" odometer installed in a passenger automobile. Physical dimensions of significant structures and culverts were directly measured while distances to signs and fences were recorded using an optical tape measure (Model M100, Ranging Inc., Rochester, N.Y.). Two individuals performed the inventory at all times, one driver/observer and one recorder. Potential problems with roads were observed and noted on the inventory. Right-of-way data and accident data were obtained from documents in the County Engineer's office and incorporated in the roadway inventory data.

Existing functional procedures for road systems were discussed with Mr. Bob Whitney (former County Engineer), Mr. Pete Hutchison (County Engineer), Mr. Darrel Hammer (Road and Bridge Office Administrator), and Mr. Ben Henan (County Road and Bridge Superintendent).

Road classification information was obtained from the City of Cheyenne Planning Office, Laramie County Engineer, and the Wyoming Highway Department.

Budget and expense information for the County Road and Bridge Department was obtained from Mr. Robert Cook in the County's Budget Office. Budget accrual and expenditure information for State-County, County Farm-to-Market projects were obtained from data furnished by the Wyoming Highway Department through the County Engineer's office.

## 2.0 Road System Inventory

### 2.1 Data Collection

#### a. Secondary Sources

Information pertaining to the following was obtained from documents available in the Laramie County Engineer's Office:

- Right-of-way data
- Accident data (last 3 years)
- Bridge inventory and sufficiency rating report

In addition, information was reviewed in the following documents:

- "Final Environmental Planning Technical Report - Transportation," January, 1984, Department of the Air Force

- "Inventory and Cost Estimate Report for Peacekeeper Routes," August, 1984, Department of the Air Force

b. Field Inventory

A physical inventory of roadways maintained by Laramie County was accomplished during the months of September and October of 1984.

Roadways were referenced to the County's existing mileline grid system. Items recorded in the physical inventory and identified as discrete entries in the data base include the following:

- Road No. and name (if any)
- Mileline location of each uninterrupted segment
- County maintenance classification
- Roadway characteristics
- Sideroad approaches or intersections
- Culverts
- Bridges
- Cattle guards
- Fences
- Overhead and underground utilities
- Railroad crossings
- Right-of-way
- Road signs and traffic signs
- Accident data

Data was referenced to the nearest 0.01 mile. Notations were made throughout the inventory to identify conditions which indicate a deterioration of either the roadway or an appurtenant part thereof (e.g., culverts, signs).

Bridges and culverts were examined to identify any obvious functional problems. Items in need of correction were noted and recorded on the inventory data.

c. Examples

Typical roadway features are shown on photograph exhibits which are contained in Appendix A. These illustrate representative examples of the range of conditions found in the County.

Photos No. 1 and No. 2 show some typical county paved roads. The road shown in Photo No. 1 is an example of pavement in excellent condition while that in Photo No. 2 shows a section of pavement which has begun to deteriorate. Photo No. 2 demonstrates the need for a systematic roadway monitoring and maintenance plan.

Photos No. 3 and No. 4 show typical graveled county roads. Photo No. 3 was taken of a section of roadway maintained by the Department of Defense (DOD) north of Missile Silo P7. Photo No. 4 shows a roadway section which is well maintained but does not have ample buildup for drainage or drifting snow. Although this latter section of road is not designated as DOD responsibility, its location as a connecting link between Missile Silos P-7 and P-9 suggests that it will be subject to additional traffic due to Peacekeeper activity.



Photos No. 5 and No. 6 show some typical large culverts. These photos illustrate the state of many such crossings in regard to side slope protection, roadway width delineators, and adequate cover (the culvert shown in Photo No. 5 is located on a project related T/E link).

Photo No. 7 shows a railroad crossing with flashing light warning. This is typical of roadways with significant traffic volumes. Remote railroad crossings do not generally have active warning controls and utilize only non-active traffic warning signs. Those locations are noted in the roadway inventory data. Such locations should be analyzed using accident frequency and traffic volume data to determine if upgrade of the warning system is warranted.

Photos No. 8 and No. 9 show typical cattle guards on the road systems. Photo No. 9 illustrates how rejected equipment tires are utilized on the narrower cattle guards to prevent damage to and by crossing traffic. So long as this method of protection affords the required protection, does not compromise safety, or does not impede traffic, its continued use is acceptable.

Photo No. 10 shows a typical approach to a missile silo. These approaches were well maintained.

Photos No. 11, 12, and 13 show typical primitive roads and undeveloped roads in the county. While not currently part of the county's maintenance responsibility, these roads experience limited local use. Some may eventually be improved and added to existing county road system.

Photos No. 14, 15, and 16 show some currently existing roadway signs on county roads. Photos No. 14 and No. 15 illustrate the problem of vandalism experienced throughout the county, especially in remote areas. Photo No. 16 illustrates the need for an upgrade of some signs to existing standards.

Photo No. 17 shows a stream crossing over a graded, low type road. Culverts are not used and cross-flow across the road is directly allowed. Ultimately, roadway buildup and addition of culverts may be required if traffic volumes warrant.

Photo No. 18 shows a warning sign for underground cable which crosses a county road. Such signing is non-existent at many other locations. It is recommended that the county impose a requirement for all utilities to install and maintain such warning signs at all county road crossings.

## 2.2 Database Development

The roadway inventory data was incorporated into a computer data base using an IBM PC compatible microcomputer with Lotus 1-2-3 software. This software package was specified for the project because of its availability at local agency offices. The Lotus software will enable future data storage, updating and retrieval of inventory information. Appendix B contains a description of the system and instruction for data access.

## 2.3 Road System Evaluation

### a. Condition and Maintenance

A field inventory of county roadways was conducted during the months of September and October, 1984. The weather was favorable and roads were dry. As a rule, roads were in good condition and appeared to be well maintained. A few paved roadways showed signs of deterioration. A small number of gravel roadways were heavily weeded (e.g., Road 209 between Mileline 149 and 150), apparently due to low usage. These conditions, however, were the exception rather than the rule. Surface conditions observed were generally excellent.

### b. Traffic Volumes

Machine traffic counts were conducted at 24 representative locations in the county road system. Each count was made for a duration of approximately 48 hours. In addition, traffic counts from the Wyoming Highway Department and the "Final Environmental Planning Technical Report - Transportation" (FEPTR-T) were used. Average daily traffic (ADT) counts were calculated and plotted on the Laramie County base map (Figure 2-1) which is located in the pocket of the back cover of this report. Based upon these values, estimated ADT projections at key locations of the roadway system have also been plotted.

Traffic volume data from the FEPTR-T report (shown as "URS 1983 ADT") were taken from traffic counts performed by the Wyoming Highway Department (WHD). Several supplemental counts were also taken by URS-Berger. URS counts were then rounded and included with the WHD traffic counts.

### c. Drainage

Drainage structures and culverts were examined during the field inventory. Some bridges previously inventoried were in need of repair (e.g., guardrail missing, holes in pavement to bridge sub-structure). Deficiencies were noted in the field inventory and are described in more detail in the "Off System Bridge Inspection and Inventory" report prepared by the Wyoming Highway Department.

Condition of culverts was generally good. Some culverts were plugged or had damaged ends as noted on the field inventory. Also, insufficient cover at some locations may present a problem for heavier traffic loads than those currently encountered.

Some roadway locations had no culverts even though a certain amount of cross-drainage occurs. At these locations, such cross-drainage is allowed to overflow the roadway during wet periods of the year. These particular roadway locations did not appear to suffer extreme damage, probably due to low traffic volume and infrequent flooding.

Addendum to  
Community Impact Planning Report - Transportation  
Volume 1 - Laramie County Transportation Plan

March 1985

d. Traffic Volume Surveillance

Road maintenance requirements depend in large part upon the volume of traffic which uses particular sections of road, and the mix of traffic (passenger cars, pickup trucks, single unit trucks, combination trucks and special vehicles such as agricultural equipment or defense related transport vehicles). Representative traffic mix values should be obtained by periodic visual observations. These classification counts should be done at different times of the year and on different classes of road.

As noted in b. above, the traffic volume data available for the County road system is fairly sparse, and is based on observations collected at different points in time. Review of the data presented in Figure 2-1 should consider the following:

- (1) The URS counts based on Wyoming Highway Department data are adjusted average daily traffic (ADT) values from 1983, while the ARIX counts are unadjusted 1984 raw counts rounded to the nearest 5 vehicles per day (no seasonal or axle mix adjustments).
- (2) The Laramie County bridge counts were also obtained at different times, subject to different adjustment procedures, from the ARIX counts.
- (3) The estimated ADT values are based upon the ARIX counts. The counting program was designed to obtain volumes radially away from Cheyenne (e.g. on Roads 215, 215A, 124), and parallel and perpendicular to major highways (e.g. the counts on Road 215 parallel to I-80, and the counts on Roads 142, 143 perpendicular to I-80 and U.S. 85). Other counts were used as benchmark values, from which estimates could be made (e.g. southwest on Road 210, east on Roads 154 and 223).

The variability and sparseness of count data underscores the need for implementing a regular counting program, as recommended in 4.2.b following. A regular counting program will permit upgrading and refining the traffic volume data base, and help make the estimating procedure more useful for forecasting volumes on the remainder of the county road system.

### 3.0 County Transportation Plan

#### 3.1 Current Conditions

##### a. General

Rural collector road systems are designated by U.S. Department of Transportation under the following classifications:

Principal Arterial Roads  
Minor Arterial Roads  
Major and Minor Collector Roads  
Local Roads

The following discussion of these classifications is taken from the U.S. Department of Transportation, Federal Highway Administration Publication "Highway Functional Classification - Concepts, Criteria and Procedures," dated July, 1974.

##### (1) Rural Principal Arterial Systems

The rural principal arterial system consists of a connected rural network of continuous routes having the following characteristics:

- Serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel.
- Serve urban areas of 50,000 and over population and a large majority of those with population of 25,000 and over.
- Provide an integrated network without stub connections except where unusual geographic or traffic flow conditions dictate otherwise (e.g., international boundary connections and connections to coastal cities).

The principal arterial system is stratified into the following two categories:

Interstate System - The Interstate subclassification consists of all presently designated routes of the Interstate System.

Other Principal Arterials - This subclassification consists of all non-Interstate principal arterials.

##### (2) Rural Minor Arterial Road Systems

The rural minor arterial road system should, in conjunction with the principal arterial system, form a rural network having the following characteristics:

- Link cities and larger towns (and other traffic generators, such as major resort areas, that are capable of attracting travel over similarly long distances) and form an integrated network providing interstate and intercounty service.

- Be spaced at such intervals, consistent with population density, so that all developed areas of the State are within a reasonable distance of an arterial highway.
- Provide (because of the two characteristics defined immediately above) service to corridors with trip lengths and travel density greater than those predominantly served by rural collector or local systems. Minor arterials therefore constitute routes whose design should be expected to provide for relatively high overall travel speeds, with minimum interference to through movement.

(3) Rural Collector Road Systems

The rural collector routes generally serve travel of primarily intracounty rather than statewide importance and constitute those routes on which (regardless of traffic volume) predominant travel distances are shorter than on arterial routes. Consequently, more moderate speeds may be typical, on the average.

In order to define more clearly the characteristics of rural collectors, this system should be subclassified according to the following criteria:

Major Collector Roads - These routes should: (1) Provide service to any county seat not on an arterial route, to the larger towns not directly served by the higher systems, and to other traffic generators of equivalent intracounty importance, such as consolidated schools, shipping points, county parks, important mining and agricultural areas, etc.; (2) link these places with nearby larger towns or cities, or with routes of higher classification; and (3) serve the more important intracounty travel corridors.

Minor Collector Roads - These routes should: (1) Be spaced at intervals, consistent with population density, to collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road; (2) provide service to the remaining smaller communities; and (3) link the locally important traffic generators with their rural hinterland.

(4) Rural Local Road Systems

The rural local road system should have the following characteristics: (1) Serve primarily to provide access to adjacent land; and (2) provide service to travel over relatively short distances as compared to collectors or other higher systems. Local roads will constitute the rural mileage not classified as principal arterial, minor arterial road, or collector road.

b. Current Classification - County Roads in Laramie County

The Rural Highway Functional Classification of Roads in Laramie County was last adopted by the County Commissioners in October of 1975. With two exceptions, all county roads are designated minor collectors or local roads. Those exceptions are the roadway extending south from State Highway No. 214 near Carpenter (County Roads No.

203 and 151) and a portion of State Highway 225 (Otto Road). These are classified as a major collectors.

### 3.2 Development Needs

An Urban System and Roadway Functional Classification was approved by the City of Cheyenne along with County, State and FHWA officials in February, 1984. The recently adopted classification plan and urban boundary delineation illustrate that urban growth to the north and east have impacted City-County roadway systems significantly. The classifications of designated roads and streets crossing the urban boundary were examined for consistency with FHWA-DOT standards. Table 3-1 lists these roadways and their corresponding classification on each side of the urban boundary.

TABLE 3-1  
EXISTING ROADWAY CLASSIFICATIONS AT URBAN BOUNDARY

<u>Roadway</u>	<u>Urban Classification</u>	<u>Rural Classification</u>
Interstate I-80	Principal Arterial	Principal Arterial
Interstate I-25	Principal Arterial	Principal Arterial
U.S. Highway 85 South (Greeley Highway)	Principal Arterial	Minor Arterial
State Highway 225 (Otto Road)	Principal Arterial	Major Collector
State Highway 210 (Happy Jack Road)	Minor Arterial	Major Collector
Yellowstone Road	Principal Arterial	Major Collector
Powder House Road	Minor Arterial	None*
Ridge Road	Collector Street	None*
Braehill Road	Collector Street	None*
Whitney Road	Collector Street	None*
Christensen Road	Collector Street	None*
Dol Range Blvd.	Principal Arterial	Major Collector
Pershing Blvd.	Collector Street	None*
Campstool Road	Collector Street	Minor Collector

The existing classifications are generally consistent with guidelines established by the Department of Transportation. Urban arteries form viable connecting links of rural arterials through the urban area. There are, however, five collector streets and one minor arterial street, shown by a "\*" in Table 3-1, which do not have a corresponding rural classification. For consistency and continuity, these county roads should be designated minor collectors since they meet the classification criteria discussed previously.

### 3.3 Recommended Functional Classification Plan

A Rural Highway Functional Classification Plan has been prepared on a Laramie County base map (Figure 3-1). Recommended additions discussed above have been included. Also shown are current Transporter/Erector (T/E) routes. This map is located in the pocket of the back cover of this report.

#### 4.0 Capital Improvements Program and Maintenance Plan

##### 4.1 Current Conditions

###### a. County Engineer

The County Engineer's office is staffed by the County Engineer and an administrative assistant. Since major new construction is usually contracted and administered by the Wyoming Highway Department, additional personnel in the County Engineer's office are not staffed on a permanent basis.

###### b. Road and Bridge Department

The Road and Bridge Department is primarily responsible for maintenance of county roads and minor construction repair. During the summer months, maintenance activity generally consists of roadside mowing, grading of gravel roadways, and repair/patching of paved roads. Roadway sanding and plowing are done during the winter months. Drainage improvements (culverts) and sign replacement are on-going throughout the season as weather permits. The major equipment pool currently consists of the following items, shown in Table 4-1:

TABLE 4-1

LARAMIE COUNTY  
ROAD AND BRIDGE DEPARTMENT EQUIPMENT POOL

6	-	8 C.Y. dump trucks
15	-	Road graders
9	-	Tractor mowers
18	-	Pickups
2	-	Flatbeds
3	-	Tractor belly dumps
1	-	Dozer
3	-	4 C.Y. front end loaders
1	-	Snow blower
2	-	60 H.P. backhoes
1	-	300 ton/hr gravel crusher

The Road and Bridge Department is staffed approximately as shown in Table 4-2.

TABLE 4-2

LARAMIE COUNTY  
ROAD AND BRIDGE DEPARTMENT STAFF POOL

1	-	Superintendent
5	-	Foremen
25	-	Operators (including 3 mechanics)
7	-	Laborers
1	-	Office Administrator
1	-	Office Staff Worker

The staff level increases during the summer months by approximately 6 equipment operators to meet roadside mowing requirements. Outside contractors are used throughout the year only when road maintenance of an urgent nature occurs which cannot be normally handled by the road and bridge staff and equipment.

c. Road Construction and Maintenance Programs

Projects for maintaining and improving the County Road System are initiated and administered under Laramie County's County Commissioner system. Commissioners receive direct input from either the general public or through other public agencies. Projects are assigned a priority and undertaken according to available funding and/or urgency. Presently, county road programs are administered as follows: (1) the Road and Bridge Department maintenance program, and (2) the State-County Roadway Capital Improvement Program through revenue sharing.

Minor roadway construction and maintenance are performed by the County Road and Bridge Department as funded under the County's budgetary process.

Major projects and capital improvements are primarily funded by State County - County Farm to Market (SC-CFM) funds, coal tax revenues, and mineral royalty revenues. This work usually consists of projects which qualify for revenue sharing and is administered through the Wyoming Highway Department (WHD). Potential projects are jointly reviewed by the County Engineer and the WHD and a priority is assigned. When funding is assured, projects are contracted and administered through the WHD. Upon completion of a project, the County is billed by the WHD for its share of cost for the work as determined by revenue sharing regulations.

The implementation of the Peacekeeper program will introduce a third category of maintenance and funding. This would involve a system based upon reimbursement of costs incurred due to impacts upon road systems by Peacekeeper activities. The impact of the Peacekeeper program upon the County's existing road maintenance will be discussed hereafter.

4.2 Projected Requirements for County Roadways

a. County Road and Bridge Maintenance Program

The maintenance needs for county road systems are reviewed on an annual basis by the Road and Bridge Superintendent and the County Engineer. The budget request is submitted to the County Budget Office for review and approval. Revisions are made when necessary to conform to revenue levels anticipated by the budget office.

The past annual budget and expenditures (last 3 years) for the Road and Bridge Department for maintenance of county roads are as follows:



TABLE 4-3

LARAMIE COUNTY  
ROAD AND BRIDGE DEPARTMENT BUDGET AND EXPENDITURES

<u>Fiscal Yr.*</u>	<u>Amount Budgeted</u>	<u>Amount Expended</u>
1982	\$1,305,524	\$1,257,391 (96.3% of budget)
1983	\$1,322,779	\$1,287,164 (97.3% of budget)
1984	\$1,475,893	\$1,417,431 (96.0% of budget)

\*July 1 through June 30

Funding for the County's Road and Bridge Department is accomplished primarily through sales and use taxes, property taxes, gasoline taxes, and a variety of other miscellaneous taxes imposed by the County. The amount budgeted for Fiscal 1985 is \$1,498,620. The primary source of funds for road and bridge operation is the County's 1% optional sales tax, approximately 60% of which is dedicated to county road systems. This tax is voted upon every 2 years by Wyoming residents. Should this revenue source be lost in the future, it is estimated that services for County roadways would be reduced by 50%.

For the current fiscal year (1985), the 1% optional sales tax provides funding for the following (as budgeted):

Road Signing Material	\$ 45,000
Road Materials	\$ 87,000
Culverts	\$ 50,000
Highway Matching Funds	\$ 20,000
Heavy Equipment Repair	\$ 85,000
Tires and Tire Repair	\$ 20,000
Road Improvements	\$ 1,000
Grader Cutting Edges	\$ 40,000
Equipment	\$315,000
TOTAL	\$663,000

The figures in Table 4-3 show that amounts expended are adequately covered by the amounts budgeted. However, funds provided are primarily for basic maintenance of existing road systems with minimal provision for major new construction. Smaller improvements such as placement of new drainage culverts are usually accomplished under this budget.

Table 4-4 shows anticipated Road and Bridge Department budget and expenditures through 1990. Base amounts were formed using the actual budgeted amount for Fiscal 1985 and the actual expended amount for Fiscal 1984. Projections were calculated using a 5% inflation factor.

TABLE 4-4

LARAMIE COUNTY-ROAD AND BRIDGE DEPARTMENT  
PROJECTED BUDGET AND EXPENDITURES

<u>Fiscal Year</u>	<u>Amount Budgeted</u>	<u>Amount Expended</u>
1985	\$ 1,499,000	\$ 1,488,000
1986	1,574,000	1,562,000
1987	1,652,000	1,641,000
1988	1,735,000	1,723,000
1989	1,822,000	1,809,000
1990	1,913,000	1,899,000
TOTAL	\$10,195,000	\$10,112,000

b. County Roadway Capital Improvement Programs

Funding of major capital improvements to county roadways is primarily administered under the County's State-County, County Farm-to-Market (SC-CFM) Program. Funding accrues on a monthly basis in accordance with a pre-set distribution formula. State-County income is derived from 10% of a 4 cent per gallon gasoline tax (State-County Fund) and 75% of a 1 cent per gallon gasoline tax (County Farm-to-Market Fund). In addition, the State Legislature recently enacted a provision for distribution of a 2.25% mineral royalty to be applied toward capital improvements.

The County is authorized to overdraw its SC-CFM account so long as such overdraft does not exceed one year's accrual plus the amount that will accrue during any awarded contract.

There also exists a coal tax revenue source which may be applied toward capital improvements. The future status of the coal tax revenue is uncertain at this time and may not be available in future years. This source would be a serious loss to the county and would severely strain its capital improvements program. Due to the uncertain status of this particular revenue source, it should not presently be counted upon as a certain revenue source until political events unfold and its status has been clarified.

The past annual accrual and expenditures (last 3 years) for SC-CFM Roadway Projects are shown in Table 4-5.

TABLE 4-5

LARAMIE COUNTY  
ACCRUAL AND EXPENDITURES - SC-CFM FUNDS

<u>Fiscal Yr.*</u>	<u>Amount Accrued</u>	<u>Amount Expended</u>	<u>Account Balance End of Fiscal Yr.</u>
1982	\$ 304,985	\$ 13,629	\$ 193,595
1983	\$ 263,632	\$ 407,206	\$ 66,561
1984	\$ 270,413	\$ 66,449	\$ 303,683

\*July 1 through June 30

The following are new construction or major repair projects under the SC-CFM program on the county road system which are in the planning stage:

<u>Project</u>	<u>Fiscal Year</u>	<u>Estimated Cost</u>
1. Bridge Rehabilitation - Rd. 120 (Crow Creek)	1985	\$ 250,000*
2. Bridge Rehabilitation - Rd. 124	1986	325,000*
3. Pave Portion Road 207B (Allison Rd.)	1986-87	50,000 (estimate)
4. Redesign Portion Rd 125 (Walterscheid Blvd.)	1986-87	50,000 (estimate)
5. Redesign Portion Rd 142 (Hillsdale Rd.)	1988-89	50,000 (estimate)
6. Overlay Portions Rds. 164, 222, 203/151, 161, 164 (total approx. 34 miles)	1988-89	50,000 (estimate)

\*Funding may be available through coal tax revenues

It is recommended that the County implement a long term roadway capital improvement program which will incorporate the projects above.

The action item listing below is suggested as a guideline for implementing such a program. The action items are listed in order of decreasing priority and may be revised to suit the special needs of the County. Data taken from the roadway inventory may be used to identify specific locations in the county road system.

- Upgrading roadway segments with a frequent history of accidents
- Repair or replacement bridges deteriorated by age or damage
- Resurfacing of deteriorating paved roadways
- Upgrading of selected existing gravel roadways to meet Wyoming Highway Department Standards "Design Guide for Local Roads and Streets" (July 1984) as justified by traffic volumes
- Upgrading and replacement of road and traffic signing at locations where such signing is sub-standard, damaged or non-existent
- Upgrading substandard cattle guards
- Upgrading drainage culverts with wing walls or riprap where erosion encroaches on road traveled way or shoulder

Since level of priority for a given roadway is primarily dependent upon average daily traffic volume, it is recommended that the County implement its own traffic counting system using automatic traffic counting machines (ATM's). Traffic volume data combined with design standards such as Wyoming Highway Department's (WHD) "Design Guide for Local Roads and Streets" (July 1984) may be used to form a basis for determining which specific roadways need upgrading and improvement. Standards published therein should be checked for conformance with AASHTO's recently published standard "A Policy on Geometric Design of Highways and Streets" - 1984 (Green Book). Tables 4-6 and 4-7 illustrate typical design guidelines contained in the WHD design guide.

A capital improvement program should incorporate all of the general priorities listed above. These may be further condensed into three general categories of improvements:

1. Bridge rehabilitation or replacement
2. Pavement construction or rehabilitation
3. Gravel road construction or upgrade

A long term capital improvement program will require a significant funding commitment. While such a commitment must be as flexible as possible, it is recommended that a long range plan be adopted to insure that sufficient time is allowed for design efforts and budgetary planning. Initially, it is recommended that the following minimum amounts (1984 dollars) be committed annually to the capital improvement program:

Bridge Rehabilitation/Replacement -	\$300,000
Pavement Rehabilitation/Replacement -	150,000
Gravel Road Upgrade/Construction -	<u>280,000</u>
TOTAL	\$730,000

These funds would enable accomplishment of work approximately as follows for each of the next several years:

- 1 each - Bridge Repair/Replacement
- 6 miles - Pavement Rehabilitation/Replacement
- 10 miles - Gravel Road Upgrade/Replacement

These figures will, of course, vary according to project complexity and location. However, the importance of implementing a long term, organized capital improvement program cannot be over emphasized.

The programs currently in the planning stage, bridge repair and pavement rehabilitation, partially meet these criteria. Additional consideration should be given to gravel road upgrade with priority given to areas with frequent history of accidents and segments which are substandard to those set forth in Wyoming Highway Department's "Design Guide for Local Roads and Streets."

Currently, the revenue sources for funding capital improvements in fiscal 1985 are as follows:

TABLE 4-6

## DESIRABLE MINIMUM DESIGN SPEEDS

TYPE OF TERRAIN	DESIRABLE MINIMUM DESIGN SPEED (M.P.H.)						
	CURRENT AADT LESS THAN 50	CURRENT AADT 50-250	CURRENT AADT 250-400	CURRENT AADT OVER 400	PROJECTED DHV 100-200	PROJECTED DHV 200-400	PROJECTED DHV OVER 400
Level	50	50	60	60	60	60	60
Rolling	40	40	50	50	50	60	60
Mountainous	30	40	40	50	50	50	50

## MINIMUM DESIGN SPEEDS

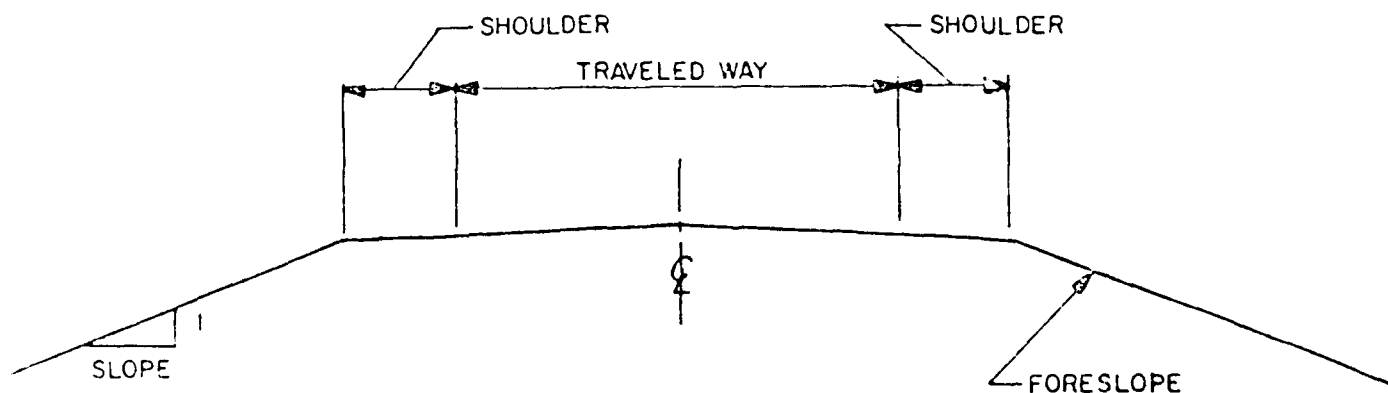
TYPE OF TERRAIN	MINIMUM DESIGN SPEED (M.P.H.)						
	CURRENT AADT LESS THAN 50	CURRENT AADT 50-250	CURRENT AADT 250-400	CURRENT AADT OVER 400	PROJECTED DHV 100-200	PROJECTED DHV 200-400	PROJECTED DHV OVER 400
Level	30	30	40	50	50	50	50
Rolling	20	30	30	40	40	40	40
Mountainous	20	20	20	30	30	30	30

NOTE: The Minimum Design Speeds shall be used only where site conditions dictate. The desirable values shall be used wherever reasonably feasible. Where necessary, the Minimum Values may be used for a particular section of road or location when the proper advance warning signing is provided.

TABLE 4-7  
MINIMUM WIDTH OF TRAVELED WAY AND SHOULDER

DESIGN SPEED (MPH)	WIDTH OF TRAVELED WAY (FEET) FOR DESIGN VOLUMES					
	CURRENT AADT UNDER 250	CURRENT AADT 250-400	CURRENT AADT OVER 400	PROJECTED DHV 100-200	PROJECTED DHV 200-400	PROJECTED DHV OVER 400
20	18	20	20	20	22	24
30	18	20	20	20	22	24
40	20	20	22	22	22	24
50	20	20	22	22	24	24
60	20	22	22	22	24	24
ALL DESIGN SPEEDS	WIDTH OF PAVED OR GRADED SHOULDER (FEET)					
	2	2	4	6	8	8

- NOTE: (1) The shoulder width is measured from the edge of the traveled way to the point of intersection of the shoulder slope and foreslope (fillslope).
- (2) It is recommended that the shoulders be paved to allow usage during inclement weather; to minimize damage from vehicles and to lessen the moisture that infiltrates into the base courses.



<u>SC-CFM</u>	<u>2.25% Mineral Royalty</u>	<u>Total</u>
\$264,839	\$357,506	\$622,345

Assuming that existing budgets and revenues increase at the rate of 5% annually, projected budget and expenditures for capital improvements are shown in Table 4-8 (exclusive of DOD participation for Peacekeeper related projects):

TABLE 4-8

LARAMIE COUNTY - CAPITAL IMPROVEMENTS  
PROJECTED BUDGET AND EXPENDITURES

<u>Fiscal Year</u>	<u>Amount Budgeted</u>	<u>Projected Requirement</u>
1985	\$ 622,000	\$ 730,000
1986	653,000	767,000
1987	686,000	805,000
1988	720,000	845,000
1989	756,000	887,000
1990	794,000	932,000
TOTAL	\$ 4,231,000	\$ 4,966,000

It will be noted that projected revenue falls short of the need which means that additional revenue sources would be required. If the shortfall cannot be made up because of political considerations, the result would inevitably be a reduced program for capital improvements.

c. Peacekeeper Roadway Maintenance Program

The implementation of the Peacekeeper program will require additional maintenance effort for county road systems. In particular, road networks leading to converted missile silos will experience increased use during and after construction activity. Upgrading of roadways from gravel to pavement will require the County to increase its capability for maintenance of paved roads.

Approximately 200 miles of county roadways may ultimately be directly affected in Laramie County. Additional road maintenance equipment and operating personnel will be required.

Implementation of a monitoring/surveillance program for Transporter/Erector (T/E) road systems would insure that responsibility for roadway damage due to oversize or overweight loads is properly assessed by the County and reimbursed by responsible parties. It is estimated that the approximate equivalent of at least one person-year would be required annually for 1) administration, 2) patrolling, and 3) reporting of traffic activity on T/E roads. Administration activities would include coordination of the overall traffic monitoring procedure, issuing traffic permits, distribution of reports, and coordinating operations with other agencies. Patrolling activities

would include monitoring permit regulated traffic movements by the County's designated representative (e.g., County Sheriff, Road and Bridge Foreman, etc.). Reporting of traffic activity would include periodic inspection of T/E roadways (including joint inspections with military representatives), maintaining current road information in a microcomputer data base using selected road maintenance software.

Total projected staff and equipment required for maintaining the Peacekeeper system is estimated to be as shown in Tables 4-9 and 4-10 (1984 dollars):

TABLE 4-9

T/E ROADWAY SYSTEM MAINTENANCE - PROJECTED REQUIREMENTS

<u>Equipment</u>	<u>Initial Purchase</u>	<u>Annual Maintenance</u>
1 - Caterpillar 140 road grader	\$125,000	\$ 2,500
4 - 8 C.Y. dump trucks (tandem axle) @ \$51,000	204,000	4,000
2 - Diesel tractors @ \$100,000	200,000	4,000
2 - Belly dump trailers @ \$50,000	100,000	2,000
1 - Snow blower	45,000	900
1 - Asphalt distributor	50,000	1,000
3 - Pickups @ \$9,000	27,000	900
1 - 4 C.Y. front end loader	128,000	2,600
1 - 60 H.P. backhoe	40,000	1,000
1 - 14 ton steel wheel roller	23,000	500
2 - Sander/snow plows @ \$11,000 ea.	22,000	500
2 - Quick couplers (loader & grader ) @ \$6,000 ea.	12,000	500
6 - FM radios @ \$1,000 ea.	6,000	600
Total	\$982,000	\$21,000
<u>Personnel</u>	<u>Annual Cost</u>	
1 - Superintendent @ 1/4 time (\$26,000)	\$ 6,500	
1 - Foreman @ 1/2 time (\$21,000)	10,500	
4 - Equipment operators @ 1/2 time (\$19,000)	38,000	
1 - Maintenance Mechanic @ 1/4 time (\$20,000)	5,000	
Total	\$60,000	



TABLE 4-10

## T/E ROADWAY SYSTEM MANAGEMENT - PROJECTED REQUIREMENTS

<u>Equipment</u>	<u>Initial Purchase</u>	<u>Annual Maintenance</u>
Microcomputer Equipment/Software	\$10,000	\$ 3,000
1 - Pickup	9,000	200
2 - Automatic Traffic Counter		
Monitors (ATMs) @ \$1,000 ea.	<u>2,000</u>	<u>100</u>
Total	\$21,000	\$ 3,300
<u>Personnel</u>		<u>Annual Cost</u>
One person-year for administration, patrolling, reporting		\$35,000

The above costs are summarized as shown in 1984 dollars in Table 4-11 for the period from 1985 to 1990. Annual increases of 5% have been used to account for inflation.

TABLE 4-11

SUMMARY OF PROJECTED EQUIPMENT AND STAFFING COSTS FOR  
LARAMIE COUNTY T/E ROAD SYSTEM MAINTENANCE

	<u>Initial Equipment Purchase</u>	<u>Equipment Maintenance</u>	<u>Personnel</u>
1985	\$1,003,000	\$24,300	\$ 95,000
1986	-	25,500	99,800
1987	-	26,800	104,700
1988	-	28,100	110,000
1989	-	29,500	115,500
1990	-	31,000	121,200
TOTAL	\$1,003,000	\$165,200	\$646,200

The funding above will enable the county to effectively monitor Peacekeeper impacted roadways for damage and deterioration and assure a means for documenting claims for roadway damage due to Peacekeeper activity. In order to form a basis for a sound maintenance plan, surveillance of county roads may be conducted approximately every 30 to 60 days depending upon location and frequency of traffic activity. Surveys may be conducted in the following priority sequence:

1. Paved Transporter/Erector Links
2. Paved Project Related Links
3. Gravel Transporter/Erector Links
4. Gravel Project Related Links
5. Gravel Roadway Access Routes Between Active Gravel Pit Sources and Missile Silos
6. Program impacted County Roads with Estimated ADT Over 400
7. Program impacted County Roads with Estimated ADT Between 250 and 400

8. Program impacted County Roads with Estimated ADT Between 50 and 250
9. Program impacted County Roads with Estimated ADT Less Than 50

Upon completion of each survey, information may be entered into the computer data base programmed to identify and prioritize roadway repairs. The data may be structured to sort, for any given priority, work to be accomplished, project manpower scheduling, or project equipment requirements necessary to accomplish required tasks. Pavement management software such as California Pavement Management System may be used to manage County pavement resurfacing and rehabilitation. Some modification of the "pavement management" approach could be employed for gravel roads.

d. Financial Summary of Projected Construction and Maintenance Requirements for Laramie County Roads

A summary of all the previously discussed projected funding and expenditures for county roads is shown in Tables 4-12 and 4-13.

TABLE 4-12  
PROJECTED COUNTY ROADWAY EXPENDITURES

<u>F.Y.</u>	<u>Road &amp; Bridge</u>	<u>Capital Improvements</u>	<u>Peacekeeper Maintenance</u>	<u>Total</u>
1985	\$ 1,488,000	\$ 730,000	\$1,122,000	\$ 3,340,000
1986	1,562,000	767,000	125,000	2,454,000
1987	1,641,000	805,000	132,000	2,578,000
1988	1,723,000	845,000	138,000	2,706,000
1989	1,809,000	887,000	145,000	2,841,000
1990	<u>1,899,000</u>	<u>932,000</u>	<u>152,000</u>	<u>2,983,000</u>
TOTAL	\$10,122,000	\$ 4,966,000	\$1,814,000	\$16,902,000

TABLE 4-13  
PROJECTED COUNTY ROADWAY REVENUES

<u>F.Y.</u>	<u>Road &amp; Bridge</u>	<u>Capital Improvements</u>	<u>Peacekeeper Maintenance</u>	<u>Total</u>
1985	\$ 1,499,000	\$ 622,000	\$1,122,000	\$ 3,243,000
1986	1,574,000	653,000	125,000	2,352,000
1987	1,652,000	686,000	132,000	2,470,000
1988	1,735,000	720,000	138,000	2,593,000
1989	1,822,000	756,000	145,000	2,723,000
1990	<u>1,913,000</u>	<u>794,000</u>	<u>152,000</u>	<u>2,859,000</u>
TOTAL	\$10,195,000	\$ 4,231,000	\$1,814,000	\$16,240,000

It has been assumed that the expense of roadway maintenance for the Peacekeeper program will be reimbursed to the county on a dollar-for-dollar basis. If this is not the case, the County will suffer financially and it is certain to adversely impact any planned maintenance and capital improvement programs. As shown, the non-

Peacekeeper programs project a \$662,000 deficit through 1990 and other means of funding must be explored to prevent any reduction in roadway maintenance and improvement services. Retention of the coal tax revenue would help restore funding shortfalls. An increase in the county sales tax would be another possible source. However, political considerations must be dealt with and such additional sources are not assured.

#### 4.3 Construction Traffic Control Plan

##### a. Access Routes

Construction related traffic for the Peacekeeper system should be confined as much as possible to designated T/E routes. Figure 4-1 has been developed to show a routing network over county roads. This map is located in the pocket in back cover of this report. The network includes State/Federal highways, designated T/E routes over county roads, and Non-T/E county roads used for access to gravel pit sources. Also included are Non-T/E county roads which provide direct access from gravel pit supply points designated in the FEPTR-T report to the missile silos scheduled for initial deployment of the Peacekeeper system. The designated gravel pits and missile silos scheduled for modification (Laramie County) are listed in Table 4-10.

TABLE 4-14  
LARAMIE COUNTY GRAVEL PITS AND MISSILE SILO CONVERSIONS

<u>Gravel Pits</u>				<u>Missile Silos</u>		
L1	L7	L12	L17	P4	P9	Q5
L2	L8	L13	L18	P5	P10	Q6
L3	L9	L14	L19	P6	P11	Q7
L4	L10	L15	L20	P7	Q3	Q8
L5	L11	L16	L21	P8	Q4	Q11
L6						

The roadway network shown on Figure 4-1 was developed to provide roadway access between any gravel pit source and any given missile silo listed above.

##### b. Permitting and Surveillance Plan

In order to maintain the condition of Transporter/Erector (T/E) roadways at a level required to support defense site needs, a program for monitoring Peacekeeper related traffic over county roads should be implemented. Such a program would assure continual surveillance of roadway and structures condition for deterioration, damage, and extraordinary maintenance needs.

The State of Wyoming has enacted Statute 31-5-1002(a)(x) which requires that cargos hauled over county roads that exceed weight and size limitation for state highways are required to have a permit issued by the County. A permitting system administered by the County would enable maintenance personnel to more closely monitor roadways and, thus, claim reimbursement for damage to roadways caused by Peacekeeper related traffic. A suggested format for a county road permit is shown in Figure 4-2.

FIGURE 4- 2

<b>Laramie County</b> <b>Cheyenne, Wyoming</b>		No. _____
<b>SPECIAL TRANSPORT PERMIT FOR COUNTY ROADS</b> <b>for</b> <b>OVERSIZE/OVERWEIGHT</b> <b>Peacekeeper-Related Traffic on Transporter/Erector Routes</b>		
Place of Issue _____	AM TIME PM _____	Date _____ 19__
This Permit is issued in accordance with the following statute of the State of Wyoming: Any load hauled on county roads that exceeds the legal weight and size limitations as prescribed by State statutes for State Highways is required to have a permit issued by the County to move on County roads [Wyoming Statute 31-5-1002(a)(x)]		

Shipment Consists of: \_\_\_\_\_

From: \_\_\_\_\_ To: \_\_\_\_\_

Over State Highways \_\_\_\_\_

Over County Roads \_\_\_\_\_

On Following Dates: \_\_\_\_\_

No. of Trips \_\_\_\_\_ Vehicle License \_\_\_\_\_ Make-Type of Vehicle \_\_\_\_\_

Trailer License: \_\_\_\_\_ Special License: \_\_\_\_\_ Trl. House Serial \_\_\_\_\_

Gross Weight: \_\_\_\_\_ No. of Axes: \_\_\_\_\_ Dist. 1st to Last Axle: \_\_\_\_\_ Overall Length \_\_\_\_\_ FT.

Overhang Front \_\_\_\_\_ FT. Rear \_\_\_\_\_ FT. Height \_\_\_\_\_ FT. Width: \_\_\_\_\_ FT.

**THE FOLLOWING RESTRICTIONS MUST BE OBSERVED AS CHECKED**

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Flagmen required Number _____  | <input type="checkbox"/> Pilot Front & Rear                             | <input type="checkbox"/> County Inspector Req.   |
| <input type="checkbox"/> One Pilot Car Required   | <input type="checkbox"/> Oversized Load Sign Front and Rear (Wide-Long) | <input type="checkbox"/> Two Pilot Cars Required |
| <input type="checkbox"/> Loads in excess of 140 000 lbs (Gross) must travel at less than 10 M P H. in the center of the driving lane when crossing bridges. |   |  |
| <input type="checkbox"/> Other restrictions as follows _____  |   |  |

If the requested permit is granted, the undersigned agrees

- 1 To take every precaution to protect the roadway and the traffic from damage or injury, using pilot cars or flagmen to warn the traveling public on all blind curves both vertical and horizontal
- 2 In case of overwidth of load, the cargo is to be placed on the vehicles with the overhang as far to the right as possible, and shall be loaded to present the minimum hazard to traffic
- 3 To be financially responsible and to make prompt payment for any damage caused to the traffic, overhead signs, wires, cables and other installations or to the roadway or bridges by the transportation of this load
- 4 That the operator of the vehicle or vehicles is duly licensed according to statute
- 5 To operate the vehicle or vehicles at all times in accordance with any and all provisions of law, except as exempted herein, with regard to motor vehicles and the operation thereof
- 6 That he understands and accepts all provisions and requirements of this permit
- 7 To indemnify and hold harmless Laramie County, its officers and employees from all suits, actions or claims of any character whatsoever brought because of any injuries or damage received by any person, persons or property arising from the issuance of use of this permit
- 8 The Road & Bridge Office (Phone No. 638-4302) shall be notified within 24 hours of the time when the oversize and/or overweight trip is to begin. This office may postpone the movement of any load if the condition of the road (wet, snow, etc.) is such that the load could cause excessive damage to the road
- 9 Any overweight or oversize load found in violation of permit requirements will be stopped immediately by the County patrol officer. The load shall be parked and violation corrected before the load can be moved again

Applicant's Name \_\_\_\_\_ Signature \_\_\_\_\_

Applicant's Address \_\_\_\_\_

This application when signed by the Laramie County Engineer, or authorized representatives, in the space below provided becomes the requested permit subject to the above conditions, and with the understanding that no liability is assumed by the County by reason of its issuance in regard to condition of roads or capacity of culverts and bridges, and the applicant is charged to make necessary examination and inspection as to the adequacy of road or bridge to care for the traffic movement. In case of emergency, field officials of the County have authority to suspend this permit until emergency conditions have passed.

Approval by County Engineer \_\_\_\_\_

Approval by County Road & Bridge Superintendent \_\_\_\_\_

cc County Engineer  
 County Road & Bridge Superintendent  
 County Sheriff  
 Wyoming Highway Department

Many methods and procedures are possible for monitoring roadway conditions in a given locality. A final plan for doing so must be coordinated with the needs and capabilities of the agency assigned that responsibility. The following procedures may be used as a guideline for determining a final policy format:

- ° Implement an active and operational permit procedure for all T/E routes.
- ° Perform a general inspection (by County Road and Bridge Official) of T/E roadways on a monthly basis. Complete a written inspection report.
- ° Perform a roadway inspection (by County Road and Bridge Official) of T/E roadways recently used to transport overweight/oversize traffic shipments. Perform inspection within 48 hours after shipment is completed. Prepare a written report on findings.
- ° Perform a joint roadway inspection (by Air Force Base Official and County Official) of T/E routes in the spring and fall of the year (April and November). Prepare a written inspection report with acknowledgement by both inspecting parties on the inspection report form. Additional joint inspections may also be conducted on an "as-required" basis.
- ° Submit copies of any written inspection report noting damage or deterioration (if any). Process reports as required by State/Department of Defense agreements or procedures.
- ° Issue quarterly follow-up status reports of remedial or repair work undertaken. Include data showing future work scheduled, work in progress, and work completed during the current fiscal year.

#### APPENDIX A - PHOTO EXHIBITS

- Photo #1 - Paved road, good condition, Road 120
- Photo #2 - Paved road, deteriorating, Road 124
- Photo #3 - Graded and drained road, high type, Road 132
- Photo #4 - Graded and drained road, low type, Road 235
- Photo #5 - Double 48" CMP culvert, Road 128
- Photo #6 - 96" CMP culvert, Road 132
- Photo #7 - Railroad crossing, flashing light warning, Road 120
- Photo #8 - Cattle guard - high type
- Photo #9 - Cattle guard - intermediate type
- Photo #10 - Approach to Missile Silo P-8
- Photo #11 - Primitive road
- Photo #12 - Undeveloped road - low type
- Photo #13 - Undeveloped road - high type
- Photo #14 - Damaged traffic sign, Road 203
- Photo #15 - Damaged road sign
- Photo #16 - Non-standard road sign, Road 146
- Photo #17 - Bear Creek crossing @ Road 237 (graded, low type)
- Photo #18 - U/G Missile Silo cable crossing sign - Road 237

Photo #1  
Paved Road - Good Condition  
Road No. 120 South of Mileline  
211

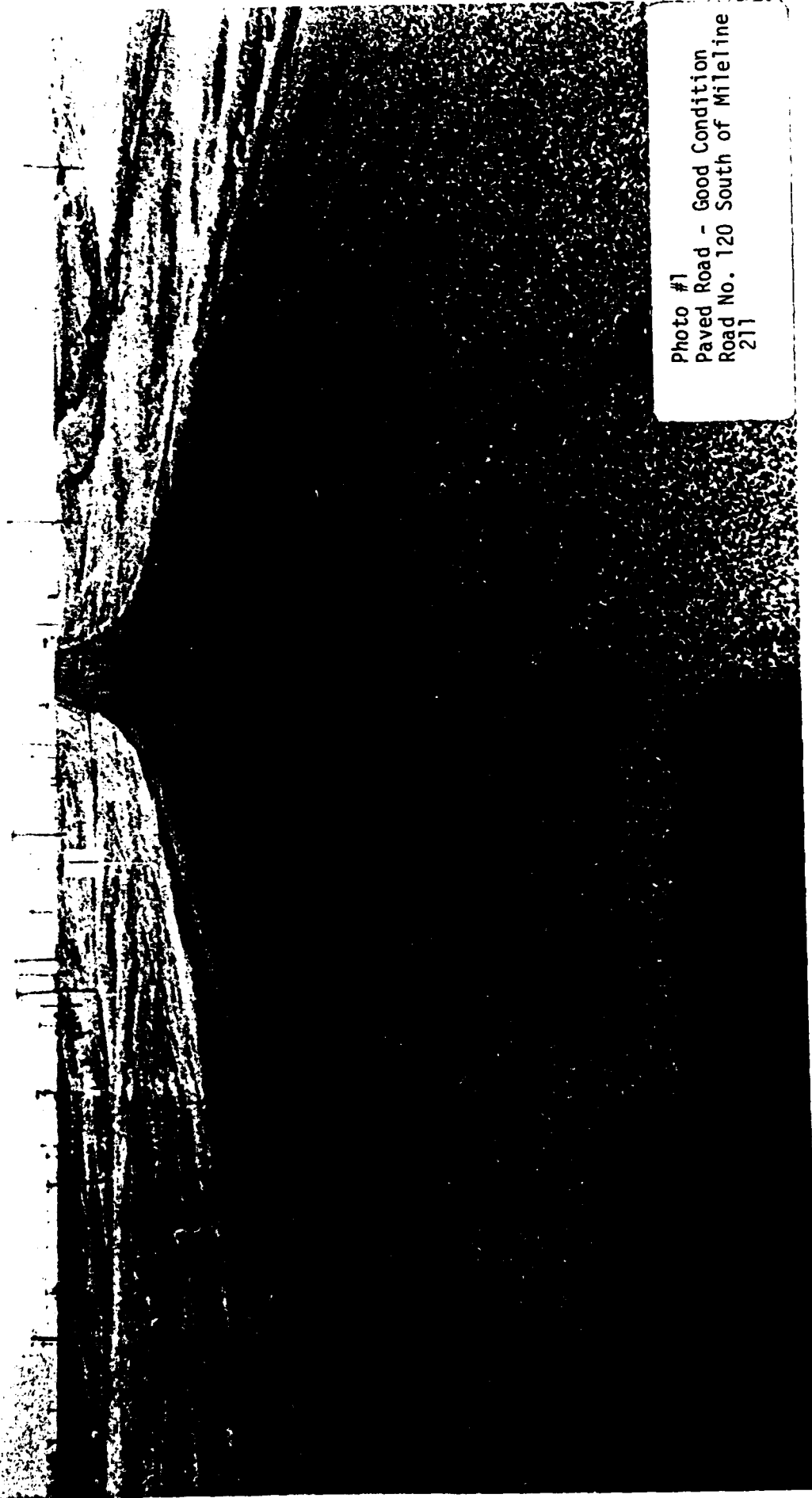
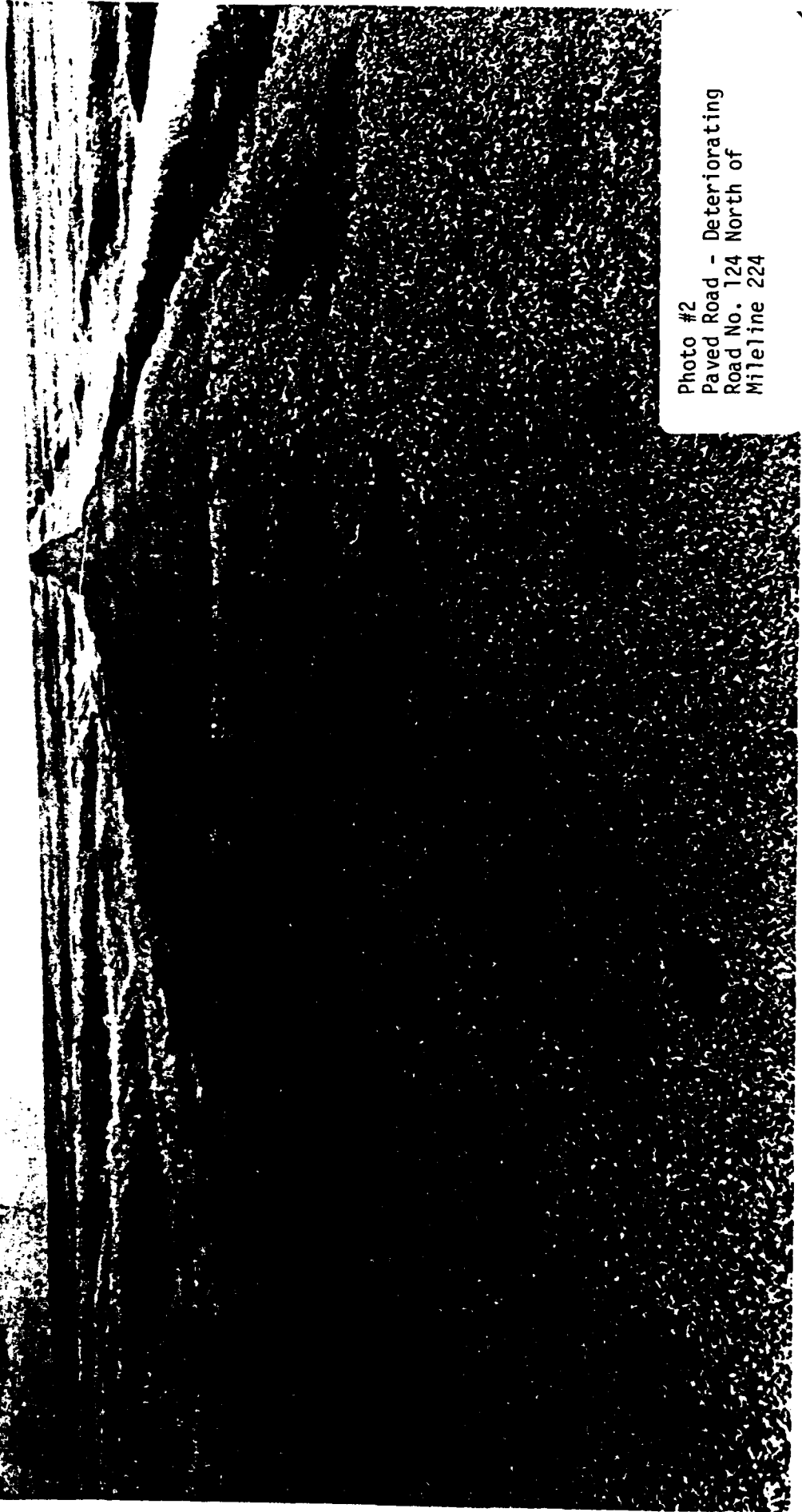


Photo #2  
Paved Road - Deteriorating  
Road No. 124 North of  
Mileline 224





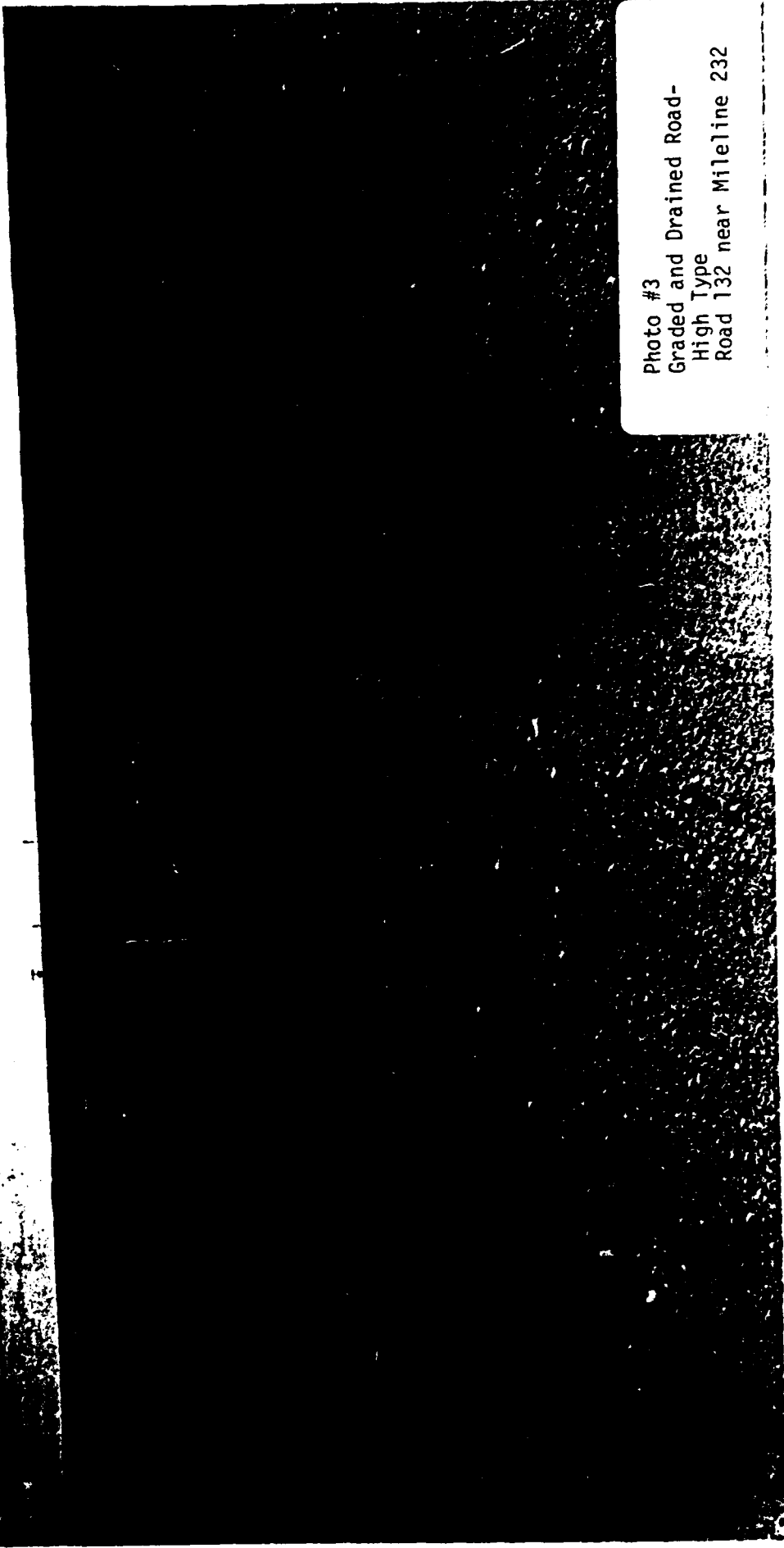


Photo #3  
Graded and Drained Road-  
High Type  
Road 132 near Mileline 232

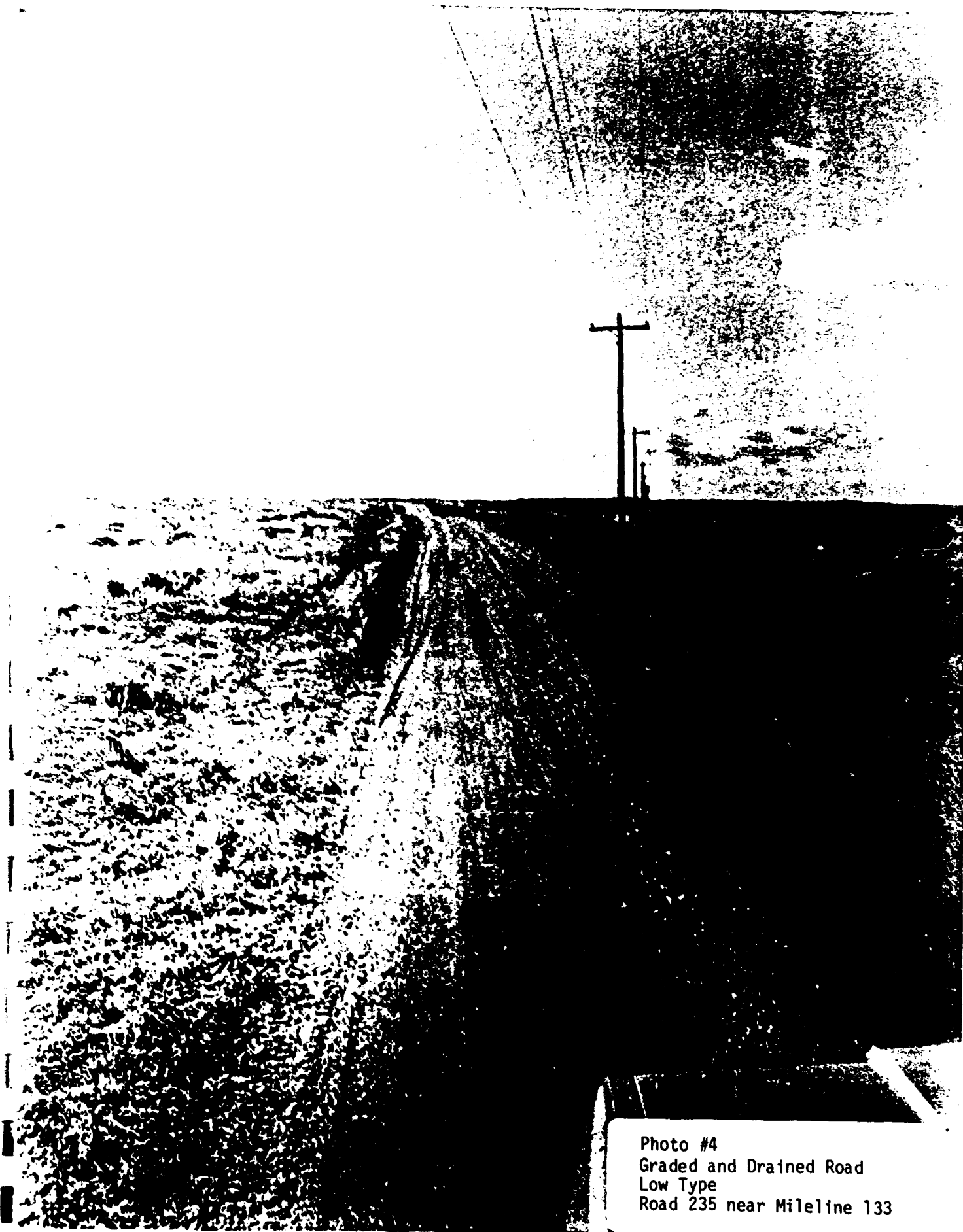


Photo #4  
Graded and Drained Road  
Low Type  
Road 235 near Mileline 133

Photo #5  
Double 48" CMP Culvert  
Road 128 - Horse Creek

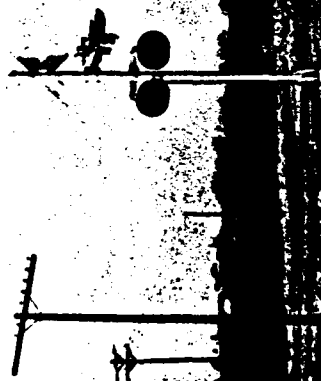


Photo #6  
96" CMP Culvert  
Road 132 - Horse Creek



RAILROAD  
CROSSING

Photo #7  
Flashing Light Railroad Crossing,  
Road 120 near Mileline 211



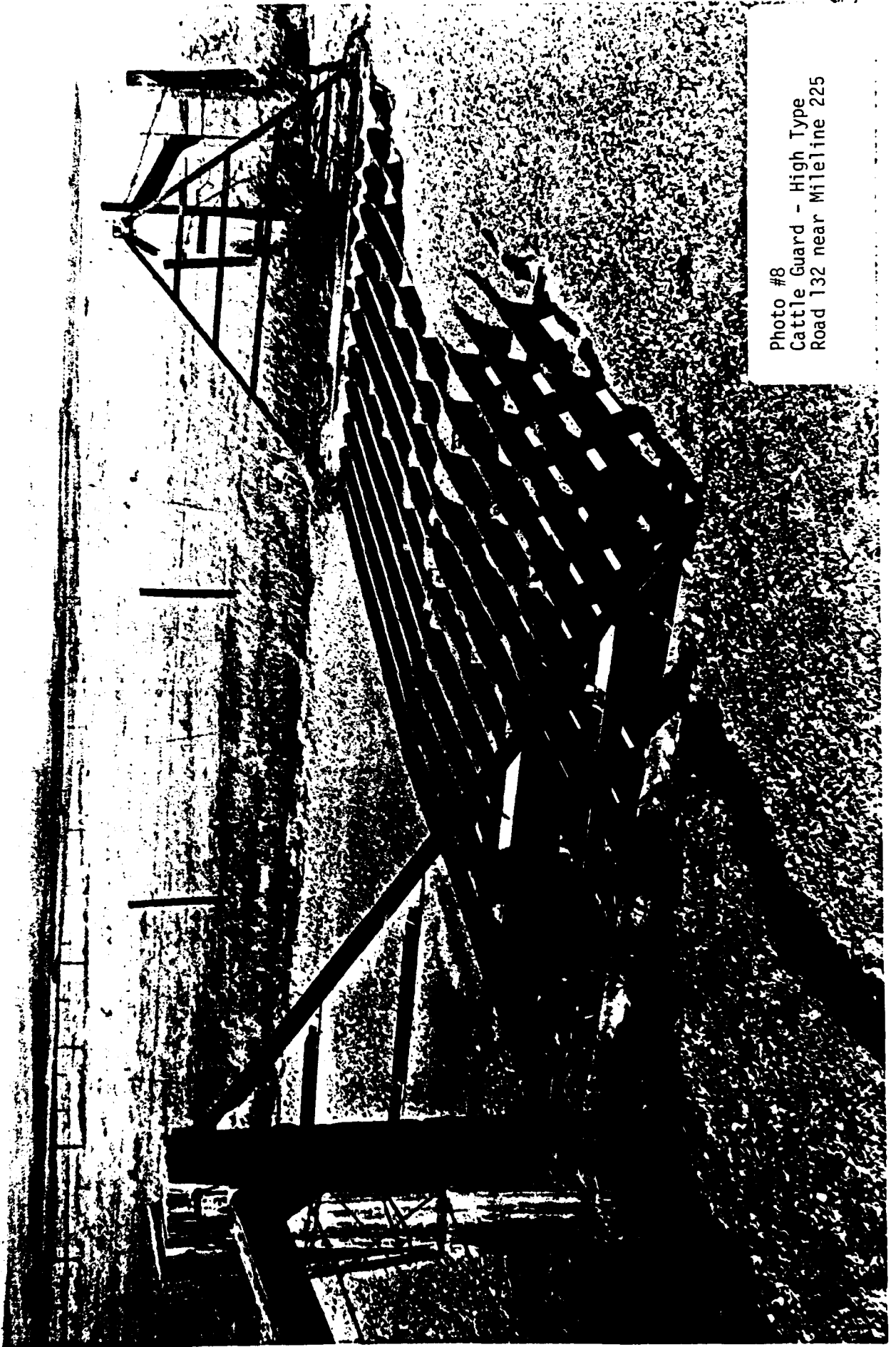


Photo #8  
Cattle Guard - High Type  
Road 132 near Mileline 225

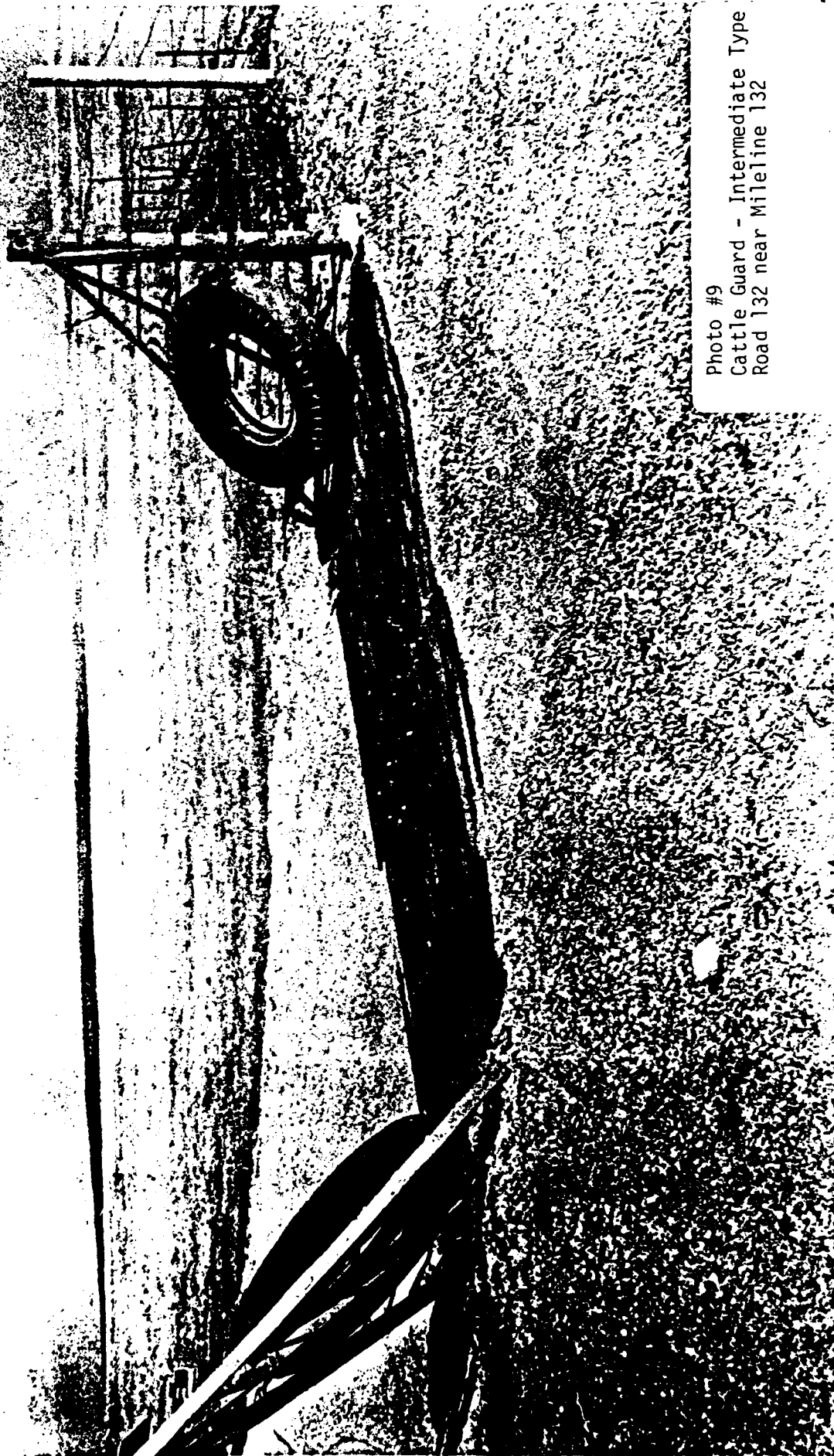


Photo #9  
Cattle Guard - Intermediate Type  
Road 132 near Mileline 132

Photo #10  
Approach to Missile Silo P-8  
Road 128 near mileline 232

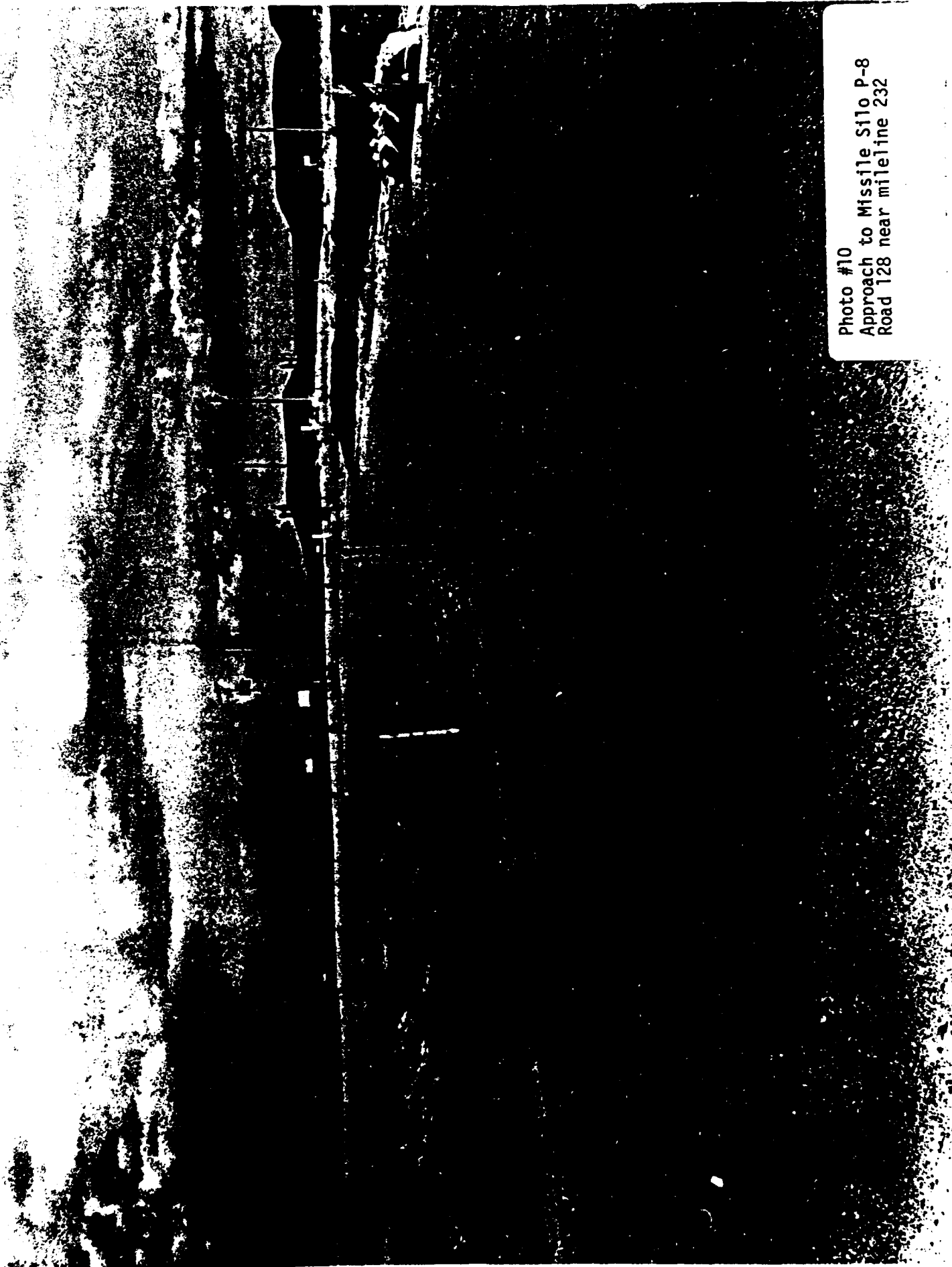




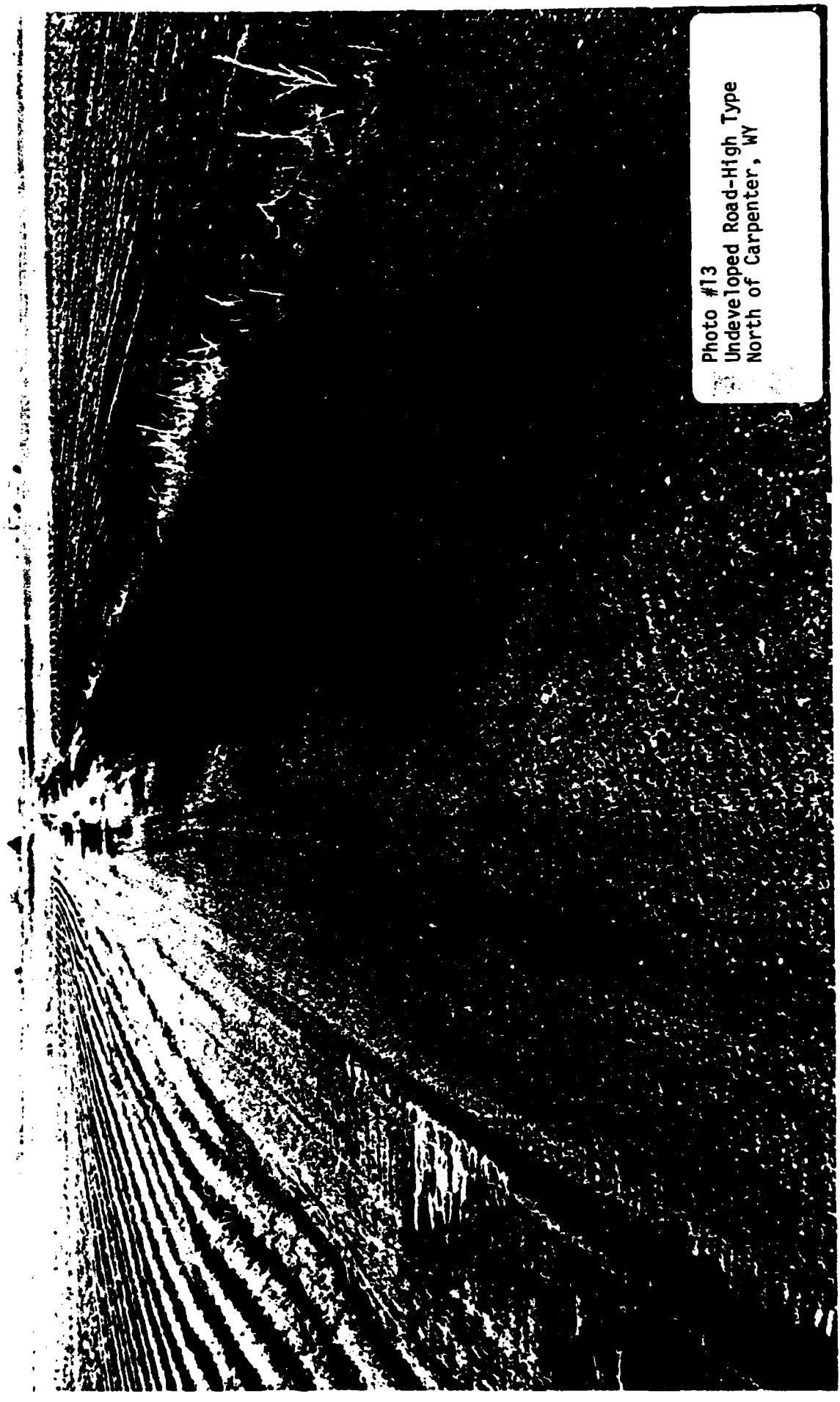
Photo #11  
Primitive Road  
North of Carpenter, WY





Photo #12  
Undeveloped Road-Low Type  
North of Carpenter, WY

Photo #13  
Undeveloped Road-High Type  
North of Carpenter, WY



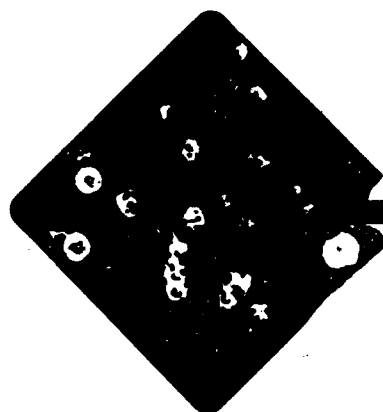


Photo #14  
Damaged Traffic Sign  
Road 203, Mileline 134

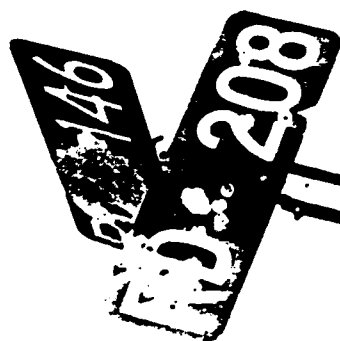


Photo #15  
Damaged Road Sign

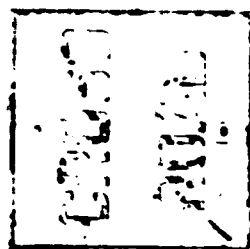
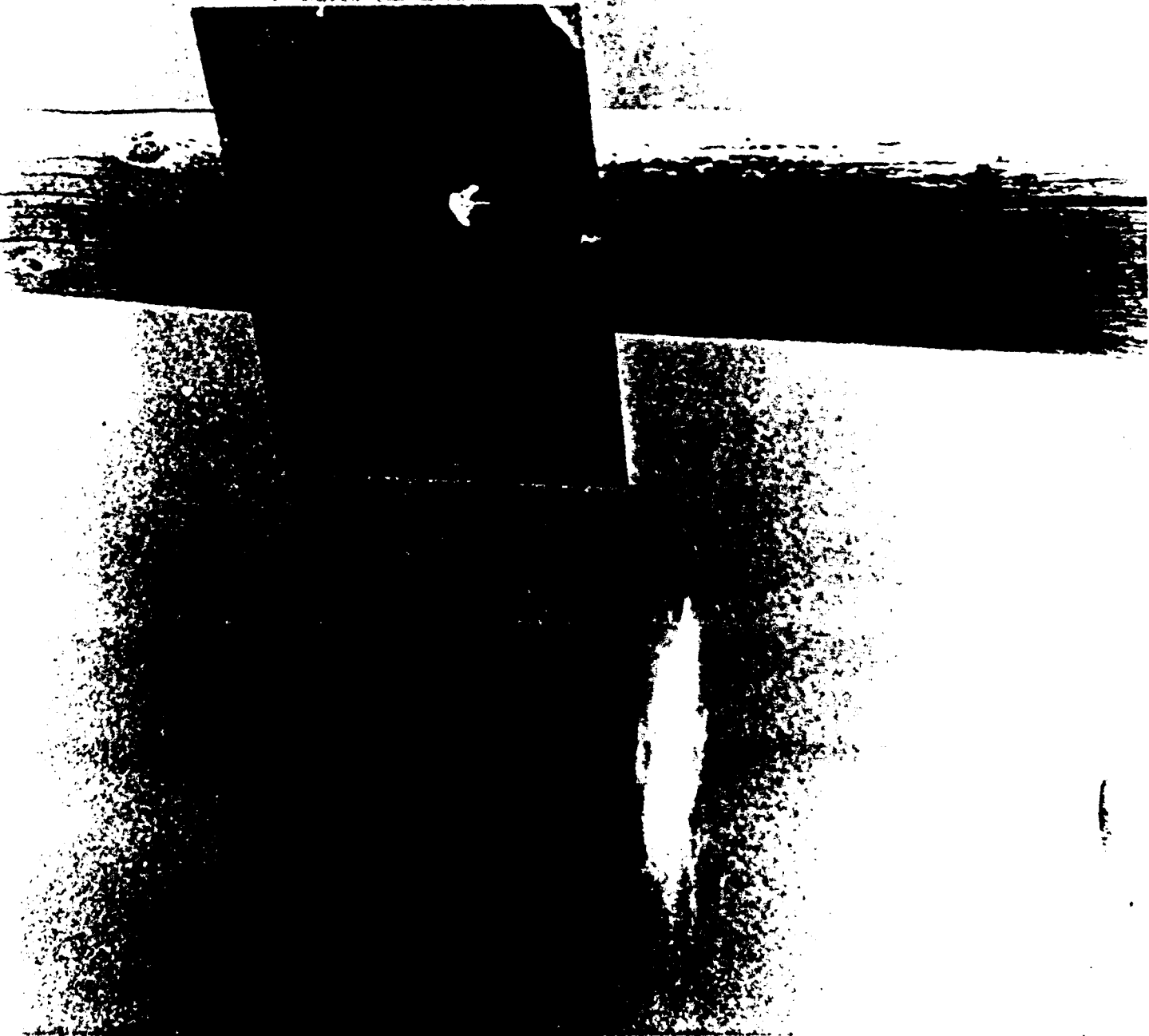


Photo #16  
Non-Standard Road Sign  
Road 146



Photo #17  
Road 237  
Bear Creek Crossing  
Graded, Low Type Road

Photo #18  
U/G Cable Crossing Sign  
for Missile Silos  
Road 237





## APPENDIX B - DATABASE USER'S GUIDE FOR COUNTY ROADWAY INVENTORY

### B-1 General

Lotus 1-2-3 is a desk-top computer program consisting of three kinds of software; a spreadsheet, a graphics package, and a information management system. The information management system capability of Lotus 1-2-3 has been used to develop a database of the Laramie County roadway inventory data. The data is set up on a spreadsheet that is 16 cells wide and of varying length. The maximum size spreadsheet allowed is 256 cells wide by 2048 cells long. The width of 16 cells has been used to allow the data to be printed out on 15" wide paper while in condensed print.

Files for the roadway inventory are stored on 5-1/4" floppy discs by road number in Ascending order. For more detailed instructions than listed hereafter, refer to the "Lotus 1-2-3" manual.

### B-2 Data Access

The following is a brief discussion of how to run the Lotus 1-2-3 software on an IBM personal computer:

1. Turn on the IBM PC.
2. Insert the Lotus 1-2-3 system disk into Drive A.
3. Insert the Data disk into Drive B.
4. Enter the date and press 'Enter' key.
5. Enter the time and press 'Enter' key.
6. The Lotus Access System screen is displayed with 1-2-3 highlighted. Press the 'Enter' key.
7. The Lotus Copyright screen is displayed.
8. Press any key to continue.
9. The Lotus spreadsheet now appears on the screen with the rows and columns displayed.
10. Press the '/' key.
11. The screen displays a line of command names - 'Worksheet Range Copy Move File Print Graph Data Quit'.
12. Press the 'F' key to invoke the File commands.
13. The screen displays a line of command names - 'Retrieve Save Combine Xtract Erase List Import Directory'.
14. Press the 'R' key to Retrieve a data file.
15. Enter the Name of the Data file (FDATA1.WKS through FDATA32.WKS) that you want to use and press the 'Enter' key. The contents of the data file chosen will be displayed. See data file index for contents of each data file.

### B-3 Data Retrieval

1. To arrange the data in different order the Data Sort command should be used. To do this:
2. Press '/' key.
3. Press 'D' for Data commands.
4. Press 'S' for Sort commands.

5. Press 'D' to specify the Data-Range  
(The Data-Range should consist of the entire data file except for the column headings, e.g., A7..P250, etc.).
6. Press 'P' for Primary-Key  
(The Primary-Key is the name of the column heading for the column that you wish to sort, ie. Road No. or Mileline, etc.).
7. Type in the column heading desired.
8. A Secondary-Key is optional if you want to sort the data by two categories. It is used in the same manner as that of the Primary-Key.
9. When either one of the Keys is used the program asks for the order in which the data is to be sorted, press either 'A' or Ascending or 'D' or Descending.
10. After the above steps have been completed, press 'G' for GO, to start the sorting process.

#### B-4 Data Updating and Display

1. Use the following steps when adding data to a file.
2. Using the Arrow Keys, scroll the screen to where the data is to be added.
3. Press '/'.
4. Press 'W' for worksheet commands.
5. Press 'I' for Insert.
6. Press a 'C' or a 'R' depending upon whether a Column or a Row is to be added.
7. When the Column or Row is added, type in the new data.
8. If a Column or Row of data needs to be deleted, follow steps 2 through 7 except press 'D' for Delete instead of 'I' for Insert.
9. To edit data in a single cell, move the cursor to the cell using the arrow keys and type in the new data. The new data will be entered into the data file upon pressing the 'Enter' key.

Perform the following to save a data file after editing.

10. Press the '/' key.
11. The screen displays a line of command names - 'Worksheet Range Copy Move File Print Graph Data Quit'.
12. Press the 'F' key to invoke the File commands.
13. The screen displays a line of command names - 'Retrieve Save Combine Xtract Erase List Import Directory'.
14. Press the 'S' key to Save the data file.
15. Enter the Name of the data file in which to store the new data or press the 'Enter' key to replace the old data file with the new changed data file.
16. The contents of the Data file will now be saved.

## APPENDIX C - TECHNICAL REFERENCES

1. "County Standards - Specifications for Construction of Rural Subdivision Roads and Streets," Laramie County, June 1979.
2. "Design Guide for Local Roads and Streets," Wyoming Highway Department, July 1984.
3. "Development of the California Pavement Management System," California Department of Transportation, October 1978.
4. "Final Environmental Planning Technical Report - Transportation", URS-Berger, January 1984.
5. "Functional Classification," Wyoming Highway Department, July 1980.
6. "Highway Functional Classification - Concepts, Criteria and Procedures," U.S. Department of Transportation, Federal Highway Administration, July 1984.
7. "Inventory and Cost Estimate Report for Peacekeeper - Related Transporter/Erector Routes, Wyoming," URS-Berger, August 1984.
8. "Off-System Bridge Inspection and Inventory," Wyoming Highway Department, 1984.
9. "A Policy on Geometric Design of Highways and Streets," AASHTO, 1984.

APPENDIX D  
LARAMIE COUNTY ROAD INVENTORY - 1984  
GLOSSARY OF DESCRIPTIVE ITEMS

Page

Page

Section 101.00 - Roadway

Section	Subsection	Material	Quantity	Unit	Notes	Remarks
101.00	101.00	Gravel	100	cu yd	For Roadway	

Notes: (1) See Notes on Section 101.00

(2) See Notes on Section 101.00

(3) See Notes on Section 101.00

(4) See Notes on Section 101.00

Section	Subsection	Material	Quantity	Unit	Notes	Remarks
101.00	101.00	Gravel	100	cu yd	For Roadway	

Notes: (1) See Notes on Section 101.00

(2) See Notes on Section 101.00

(3) See Notes on Section 101.00

(4) See Notes on Section 101.00

(5) See Notes on Section 101.00

(6) See Notes on Section 101.00

Section	Subsection	Material	Quantity	Unit	Notes	Remarks
101.00	101.00	Gravel	100	cu yd	For Roadway	

Notes: (1) See Notes on Section 101.00

(2) See Notes on Section 101.00

(3) See Notes on Section 101.00

(4) See Notes on Section 101.00

(5) See Notes on Section 101.00

(6) See Notes on Section 101.00

Section	Subsection	Material	Quantity	Unit	Notes	Remarks
101.00	101.00	Gravel	100	cu yd	For Roadway	

Notes: (1) See Notes on Section 101.00

(2) See Notes on Section 101.00

(3) See Notes on Section 101.00

(4) See Notes on Section 101.00

(5) See Notes on Section 101.00

(6) See Notes on Section 101.00

Section	Subsection	Material	Quantity	Unit	Notes	Remarks
101.00	101.00	Gravel	100	cu yd	For Roadway	

Notes: (1) See Notes on Section 101.00

(2) See Notes on Section 101.00

(3) See Notes on Section 101.00

(4) See Notes on Section 101.00

(5) See Notes on Section 101.00

(6) See Notes on Section 101.00

Section	Subsection	Material	Quantity	Unit	Notes	Remarks
101.00	101.00	Gravel	100	cu yd	For Roadway	

Notes: (1) See Notes on Section 101.00

(2) See Notes on Section 101.00

(3) See Notes on Section 101.00

(4) See Notes on Section 101.00

(5) See Notes on Section 101.00

(6) See Notes on Section 101.00



1.  $\frac{1}{2}$

1940	1941	1942
1943	1944	1945
1946	1947	1948
1949	1950	1951
1952	1953	1954
1955	1956	1957
1958	1959	1960
1961	1962	1963
1964	1965	1966
1967	1968	1969
1970	1971	1972
1973	1974	1975
1976	1977	1978
1979	1980	1981
1982	1983	1984
1985	1986	1987
1988	1989	1990
1991	1992	1993
1994	1995	1996
1997	1998	1999
2000	2001	2002
2003	2004	2005
2006	2007	2008
2009	2010	2011
2012	2013	2014
2015	2016	2017
2018	2019	2020
2021	2022	2023
2024	2025	2026
2027	2028	2029
2030	2031	2032
2033	2034	2035
2036	2037	2038
2039	2040	2041
2042	2043	2044
2045	2046	2047
2048	2049	2050
2051	2052	2053
2054	2055	2056
2057	2058	2059
2060	2061	2062
2063	2064	2065
2066	2067	2068
2069	2070	2071
2072	2073	2074
2075	2076	2077
2078	2079	2080
2081	2082	2083
2084	2085	2086
2087	2088	2089
2090	2091	2092
2093	2094	2095
2096	2097	2098
2099	2100	2101
2102	2103	2104
2105	2106	2107
2108	2109	2110
2111	2112	2113
2114	2115	2116
2117	2118	2119
2120	2121	2122
2123	2124	2125
2126	2127	2128
2129	2130	2131
2132	2133	2134
2135	2136	2137
2138	2139	2140
2141	2142	2143
2144	2145	2146
2147	2148	2149
2150	2151	2152
2153	2154	2155
2156	2157	2158
2159	2160	2161
2162	2163	2164
2165	2166	2167
2168	2169	2170
2171	2172	2173
2174	2175	2176
2177	2178	2179
2180	2181	2182
2183	2184	2185
2186	2187	2188
2189	2190	2191
2192	2193	2194
2195	2196	2197
2198	2199	2200
2201	2202	2203
2204	2205	2206
2207	2208	2209
2210	2211	2212
2213	2214	2215
2216	2217	2218
2219	2220	2221
2222	2223	2224
2225	2226	2227
2228	2229	2230
2231	2232	2233
2234	2235	2236
2237	2238	2239
2240	2241	2242
2243	2244	2245
2246	2247	2248
2249	2250	2251
2252	2253	2254
2255	2256	2257
2258	2259	2260
2261	2262	2263
2264	2265	2266
2267	2268	2269
2270	2271	

Notes: ;5a10N  
;110607 ;50611" (1) ;110607 ;50611" (1)

(C) Item Listing  
(1) TPC (Power, Guy Wire, Telephone, Petroleum, Etc.)  
List Order of Priority Petroleum if Available

120.6	127.7	6.80
Leave to filling	Company Gross	

Notes: 1. Milepost Location at Beginning of Roadway Segment

(a) For listing	(b) Primary travel	(c) Primary travel (Avg.), Feet	(d) Point of way station, Feet or UDU (Undeclared)	(e) Physical Location Description

267	215	Pages
-----		
Timeline to Pipeline Complaint Class		
-----		

NOTES: 1. Milepost location

(2) Flash Listing  
(3) Flash Type (Signs, Flashing Signal, Crossing Gate, Etc.)

1948	1947	Constant Prices
------	------	-----------------

Notes: (1) East Location

(2) Free Listing (Traffic, Road, Etc.). . . . .

(3) Sign Description, Distance from Roadway Centerline-Significant Condition (No Entry Indicates Good Condition)

APPENDIX E  
SAMPLE OF 1984 LARAMIE COUNTY ROAD  
INVENTORY DATA BASE OUTPUT





Road No.	Field Notes	Mileline to Mileline	Co.Maint.Class	Milepost	Item	Material	Width	Diameter	Length	Est.Cover	Date	R/L	R.O.W.	Description
101	Harrison Road	200.0	204.0	3.97	approach	gravel	60					1		field entry
101	Harrison Road	200.0	204.0	4.02	o/h utility							1		power lines
101	Harrison Road	200.0	204.0	4.06	traffic sign							1		curve left sign 38ft Lt
101	Harrison Road	200.0	204.0	4.06	traffic sign							1		curve left sign 25ft Rt
101	Harrison Road	200.0	204.0	4.11	o/h utility							1		power lines
101	Harrison Road	200.0	204.0	4.21	traffic sign							1		curve right sign 33ft Lt
101	Harrison Road	200.0	204.0	4.23	traffic sign							1		curve right sign 25ft Rt
101	Harrison Road	200.0	204.0	4.28	approach	gravel	25	15	40	0.5		1		commercial entry
101	Harrison Road	200.0	204.0	4.48	culvert	cap						1		
101	Harrison Road	200.0	204.0	4.54	traffic sign							1		curve right sign 36ft Rt
101	Harrison Road	200.0	204.0	4.62	approach	gravel	80					1		private entry
101	Harrison Road	200.0	204.0	4.86	culvert							1		curve right sign 26ft Lt
101	Harrison Road	200.0	204.0	4.93	o/h utility	cap		30	38	0.8		1		dbl culvert
101	Harrison Road	200.0	204.0	5.02	traffic sign							1		power lines
101	Harrison Road	200.0	204.0	5.08	culvert	cap	30	36	36	0.5		1		open ridge sign 25ft Lt
101	Harrison Road	200.0	204.0	5.35	culvert	cap	24	36	36	0.5		1		
101	Harrison Road	200.0	204.0	5.50	o/h utility	paved						1		power lines
101	Harrison Road	200.0	204.0	5.93	Roadway							1		beg. pavement St. Hwy 218
101	Harrison Road	200.0	204.0	5.93	road sign							1		load limit 7 tons per axle sign 29ft Lt
101	Harrison Road	200.0	204.0	5.93	end segment							1		end @ pavement St. Hwy 218
101	Harrison Road	200.4	207.0	6.00	Roadway	paved	24					UND		beg. @ barrier on road
101	Harrison Road	200.4	207.0	6.00	approach	dirt	14					1		private entry
101	Harrison Road	200.4	207.0	6.02	o/h utility							1		telephone
101	Harrison Road	200.4	207.0	6.41	approach	gravel	20					1		field entry
101	Harrison Road	200.4	207.0	6.41	misc							1		phone pedestals (3) 6' from pavement
101	Harrison Road	200.4	207.0	6.80	road sign							1		Road 206 Lt
101	Harrison Road	200.4	207.0	6.81	o/h utility							1		Road 206 sign 32ft Lt
101	Harrison Road	200.4	207.0	6.81	R/R crossing							1		telephone
101	Harrison Road	200.4	207.0	6.81	fence	b/w						1		UPRR overpass
101	Harrison Road	200.4	207.0	6.81	fence	b/w						1		beg. fence 30ft Lt
101	Harrison Road	200.4	207.0	6.81	fence	b/w						1		beg. fence 70ft Rt
101	Harrison Road	200.4	207.0	6.81	fence	b/w						1		telephone
101	Harrison Road	200.4	207.0	6.81	approach	gravel	20					1		power lines
101	Harrison Road	200.4	207.0	6.81	approach	gravel	20					1		commercial entry
101	Harrison Road	200.4	207.0	6.81	fence	b/w						1		end fence Rt (1.06)
101	Harrison Road	200.4	207.0	6.81	fence	b/w						1		end fence Lt (1.06)
101	Harrison Road	200.4	207.0	6.81	cattle guard	fab steel						1		8:24
101	Harrison Road	200.4	207.0	6.81	end segment							1		end @ cattle guard
101	Harrison Road	207.1	207.6	6.00	Roadway	gravel	14					UND		beg. @ N. ROW fence 1-80
101	Harrison Road	207.1	207.6	6.00	cattle guard	fab steel						1		8:12
101	Harrison Road	207.1	207.6	6.14	culvert	cap	15	18	18	0.5		1		
101	Harrison Road	207.1	207.6	6.37	culvert	cap	18	40	40	2.0		1		
101	Harrison Road	207.1	207.6	6.37	o/h utility	cap						1		telephone lines
101	Harrison Road	207.1	207.6	6.45	culvert	cap	15	20	20	0.5		1		
101	Harrison Road	207.1	207.6	6.46	culvert	cap	18	18	18	0.5		1		end @ culvert
101	Harrison Road	207.1	207.6	6.00	Roadway	gravel	14					80		beg. @ stop sign St. Hwy. 211
101	Harrison Road	207.1	207.6	6.00	traffic sign							1		stop sign 40ft Lt
101	Harrison Road	207.1	207.6	6.01	w/o utility							1		telephone cable
101	Harrison Road	207.1	207.6	6.35	approach w/culvert	cap	25	15	26	6.0		1		field entry
101	Harrison Road	207.1	207.6	6.48	culvert	cap	60	60	60			1		triple culvert
101	Harrison Road	207.1	207.6	6.53	traffic sign	fab steel						1		R/R crossing sign 15ft Rt
101	Harrison Road	207.1	207.6	6.55	cattle guard							1		7x12
101	Harrison Road	207.1	207.6	6.55	R/R crossing							1		controlled crossing gate
101	Harrison Road	207.1	207.6	6.56	o/h utility							1		power lines
101	Harrison Road	207.1	207.6	6.56	fence	b/w						1		beg. fence 30ft Lt
101	Harrison Road	207.1	207.6	6.57	approach	gravel	60					1		commercial entry
101	Harrison Road	207.1	207.6	6.59	approach	gravel	20					1		Road 237 Lt
101	Harrison Road	207.1	207.6	6.61	traffic sign							1		commercial entry
101	Harrison Road	207.1	207.6	6.64	o/h utility							1		R/R crossing sign 15ft Lt
101	Harrison Road	207.1	207.6	6.65	o/h utility							1		power lines
101	Harrison Road	207.1	207.6	6.75	cattle guard	fab steel						1		8:12
101	Harrison Road	207.1	207.6	6.81	o/h utility							1		power lines
101	Harrison Road	207.1	207.6	6.86	fence	b/w						1		end fence Lt (0.56)
101	Harrison Road	207.1	207.6	6.88	culvert	cap	36	36	36	2.0		1		
101	Harrison Road	207.1	207.6	6.92	culvert	cap	15	30	30	1.0		1		
101	Harrison Road	207.1	207.6	6.92	culvert	cap	12	30	30	0.5		1		
101	Harrison Road	207.1	207.6	6.92	approach	cap	15	24	24	0.3		1		Kelly Rd Rt
101	Harrison Road	207.1	207.6	6.93	culvert	fab steel						1		8x10
101	Harrison Road	207.1	207.6	6.93	cattle guard	fab steel						1		middle Rk Chiqueter Cr.
101	Harrison Road	207.1	207.6	6.93	bridge (Inv.)	conc.						1		Road 237 Lt
101	Harrison Road	207.1	207.6	6.93	approach							1		Road 239 sign 23ft Rt
101	Harrison Road	207.1	207.6	6.93	road sign	fab steel						1		8:10
101	Harrison Road	207.1	207.6	6.93	cattle guard	fab steel						1		8:10
101	Harrison Road	207.1	207.6	6.98	cattle guard	fab steel						1		8:10



Head No.	Feet Name	Mileline to Mileline	Co.Maint.Class	Milepost	Item	Material	Width	Diameter	Length	Est.Cover	Date	R/L	K.O.W.	Description
106	Jordan Road	241.7	245.0	4.52	cattle guard	fab steel	20					1		8x14
106	Jordan Road	241.7	245.0	4.52	approach	gravel						1		primitive road Rt
106	Jordan Road	241.7	245.0	4.59	traffic sign	none						1		R/R crossing sign 12ft Lt
106	Jordan Road	241.7	245.0	5.16	culvert									culvert needed here
106	Jordan Road	241.7	245.0	5.43	o/h utility	gravel	30					1		power lines
106	Jordan Road	241.7	245.0	5.62	approach									private entry
106	Jordan Road	241.7	245.0	5.63	o/h utility									o/h wire
106	Jordan Road	241.7	245.0	5.76	o/h utility									power lines
106	Jordan Road	241.7	245.0	5.91	o/h utility									power lines
106	Jordan Road	241.7	245.0	6.21	cattle guard	fab steel						1		8x10
106	Jordan Road	241.7	245.0	6.29	fence	b/w								end fence Lt (4.44)
106	Jordan Road	241.7	245.0	6.31	culvert	none								culvert needed here
106	Jordan Road	241.7	245.0	6.58	culvert	none								culvert needed here
106	Jordan Road	241.7	245.0	6.87	cattle guard	fab steel								8x10
106	Jordan Road	241.7	245.0	6.90	o/h utility									power lines
106	Jordan Road	241.7	245.0	7.10	culvert	none								culvert needed here
106	Jordan Road	241.7	245.0	7.39	culvert	none								culvert needed here
106	Jordan Road	241.7	245.0	7.43	approach	gravel	25					1		private entry
106	Jordan Road	241.7	245.0	7.43	fence	b/w						1		beg. fence 27ft Lt
106	Jordan Road	241.7	245.0	7.59	o/h utility									power lines
106	Jordan Road	241.7	245.0	7.67	o/h utility									power lines
106	Jordan Road	241.7	245.0	7.77	fence	b/w						1		beg. fence 30ft Rt
106	Jordan Road	241.7	245.0	7.80	o/h utility									power lines
106	Jordan Road	241.7	245.0	7.81	misc									power pole 14ft Rt should relocate
106	Jordan Road	241.7	245.0	7.81	fence	b/w						1		end fence Lt (7.43)
106	Jordan Road	241.7	245.0	7.81	bridge (inv.)	b/w						1		end fence Rt (7.77)
106	Jordan Road	241.7	245.0	8.12	bridge (inv.)	conc.	18							Chapwater Cr.
106	Jordan Road	241.7	245.0	8.12	traffic sign							1		to Cheyenne, to Chapwater 18ft Rt
106	Jordan Road	241.7	245.0	8.12	approach	gravel	35					1		private entry
106	Jordan Road	241.7	245.0	8.19	traffic sign							1		R/R crossing sign 11ft Rt
106	Jordan Road	241.7	245.0	8.20	end segment							1		county line sign 10ft Lt
106	Jordan Road	241.7	245.0	8.20										end of cattle guard/Co. Line

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# PLATTE

R70W

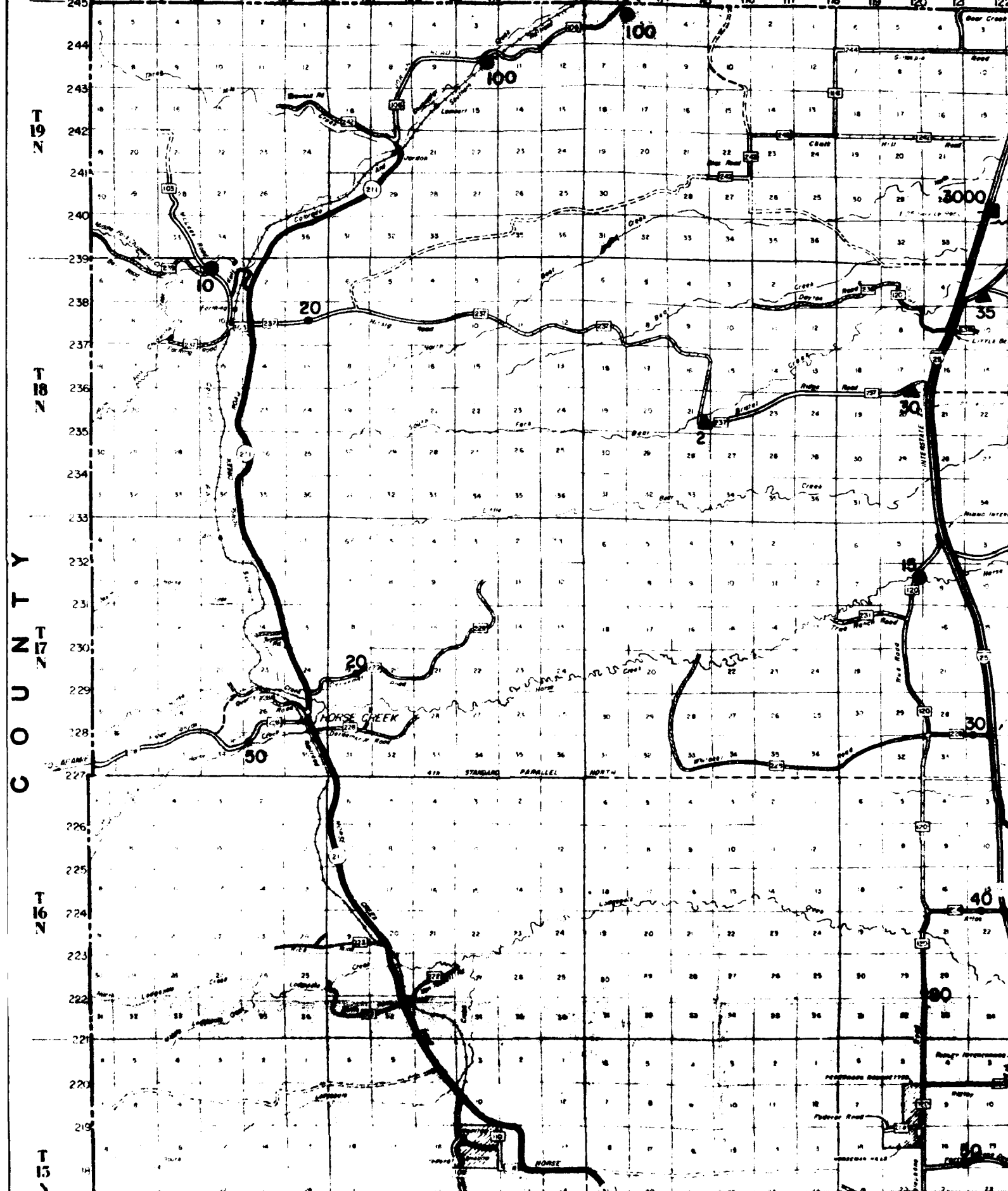
R69W

R68W

R67W

C

MILELINE NO  
(NORTH-SOUTH)



COUNTY

167W

R66W

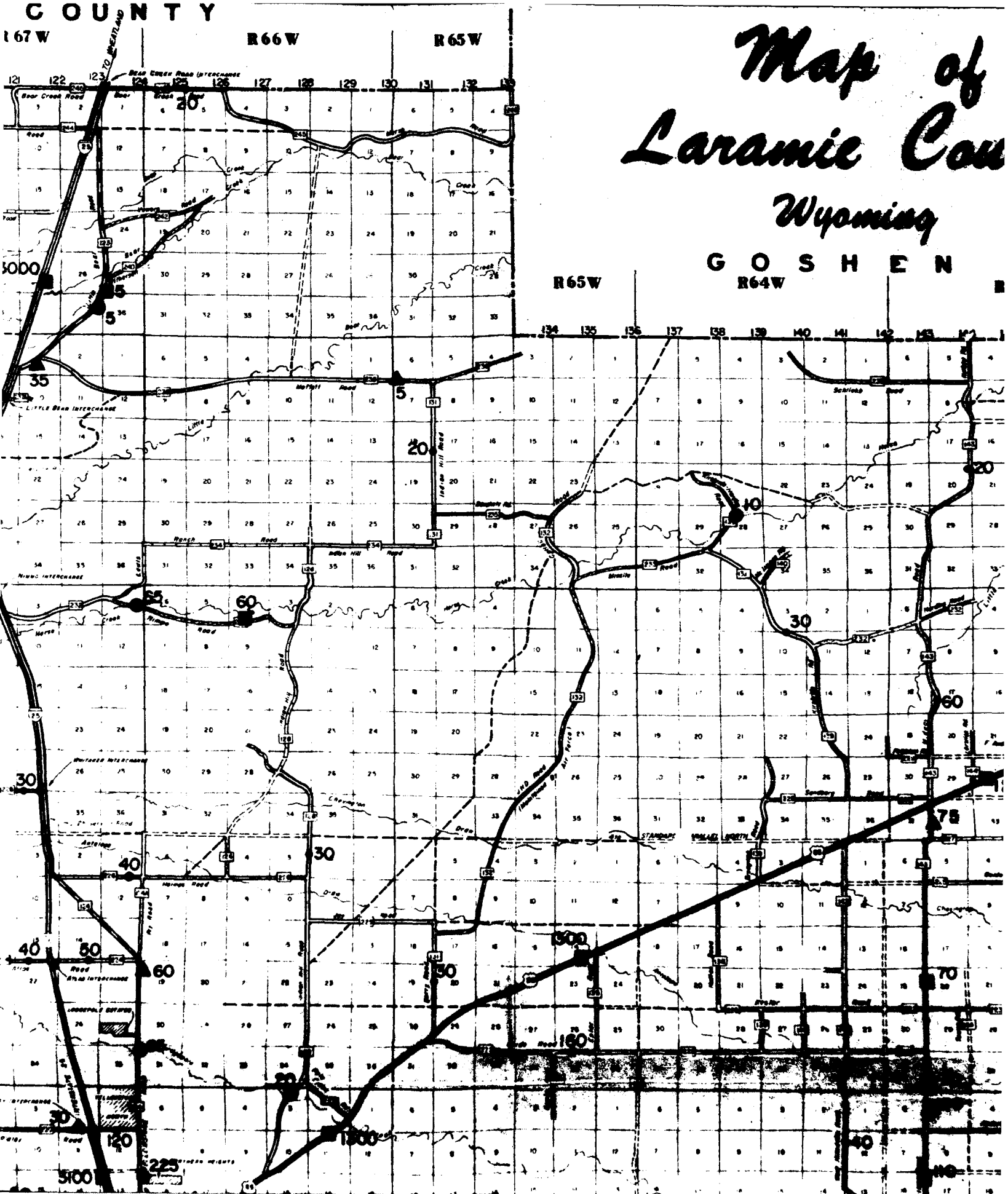
R65W

# Map of Laramie County Wyoming

G O S H E N

R65W

R64W



of  
country

## LEGEND

Original Map By  
R.H. Whitney  
Laramie, Co. Eng.  
Ord. L. Shiple  
July 1, 1975  
Revisions:  
February 1, 1977  
October 31, 1978  
Dr. Peter J. ...

### Interstate Highway

## How Healthy

### County Maintained Roads

**Declarant County Books:**

**Power Feed**

### Grouted & Drained Road

Graded Road, Low Type

**Private Road**

### Underdeveloped Road

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

**Abstract**

## Summary

**COURSE 4: 1994**

Case of Mrs. J. L. Smith

11-10-68

\_\_\_\_\_

APRIL 2006 AND COUNTY

## Estimation

**N**

2025

**Abstract**

C O U N T Y

**R63 W**

162W



**CONCLUSIONS**

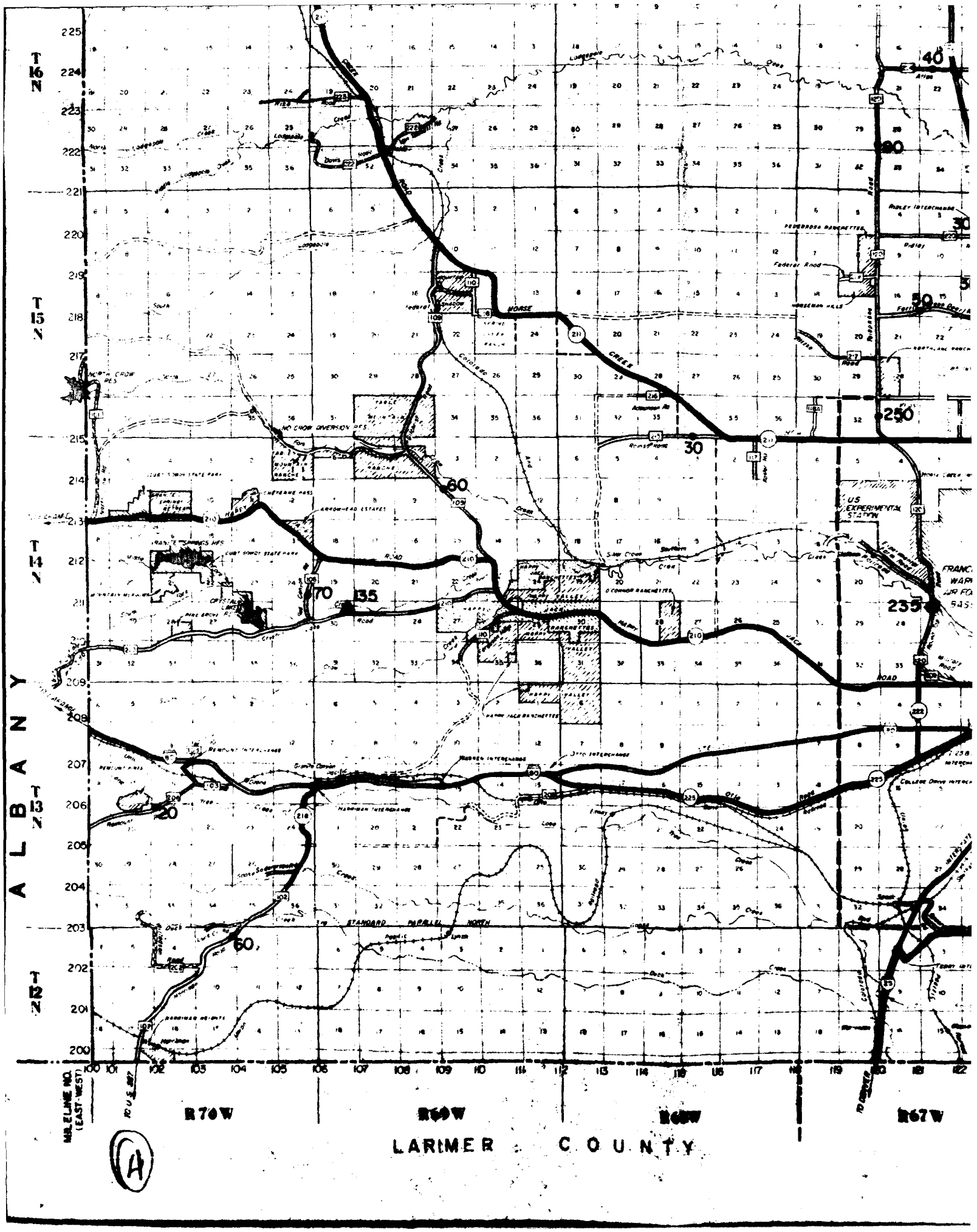
**T  
E  
N**

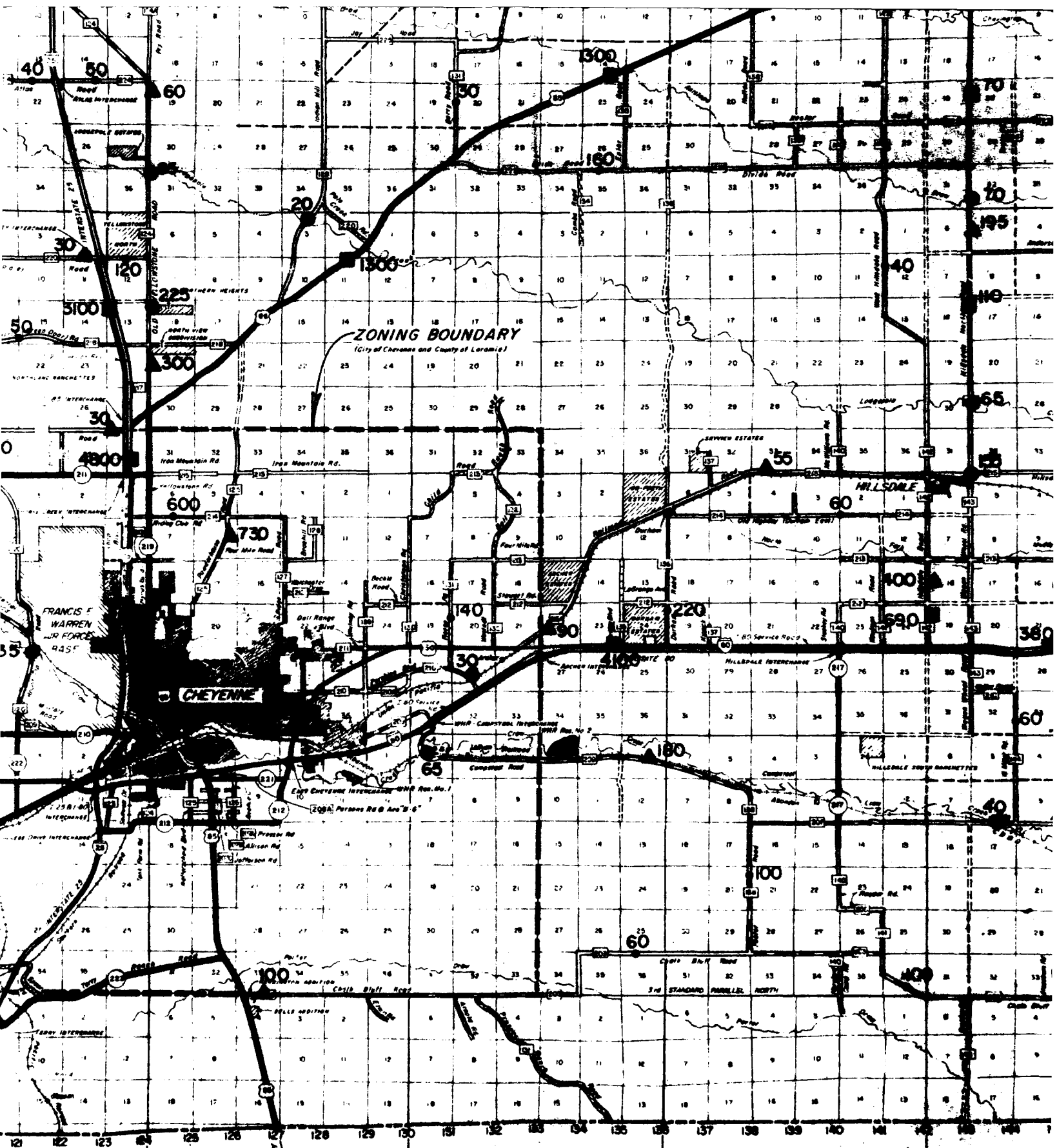
BANNER COUNTY

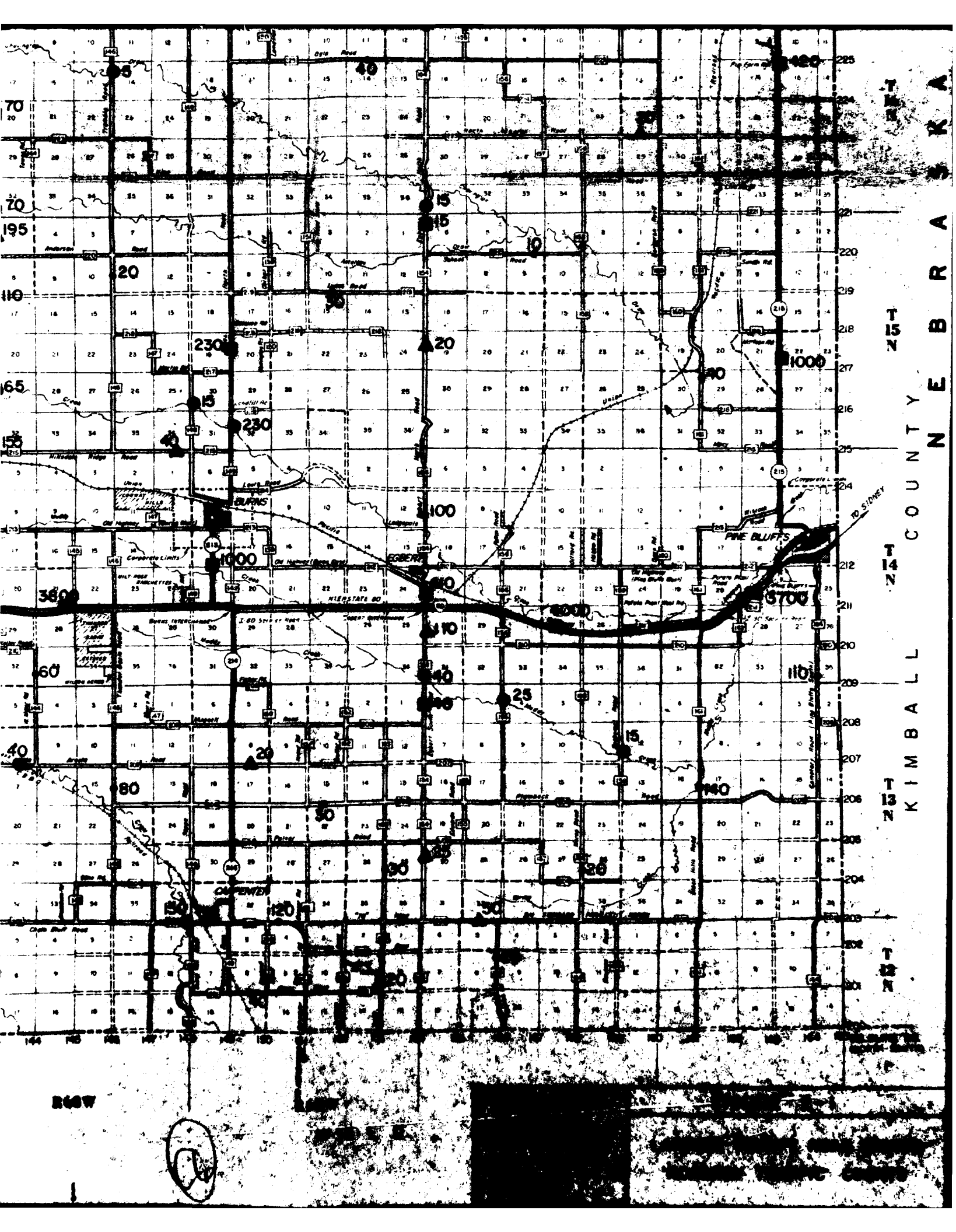


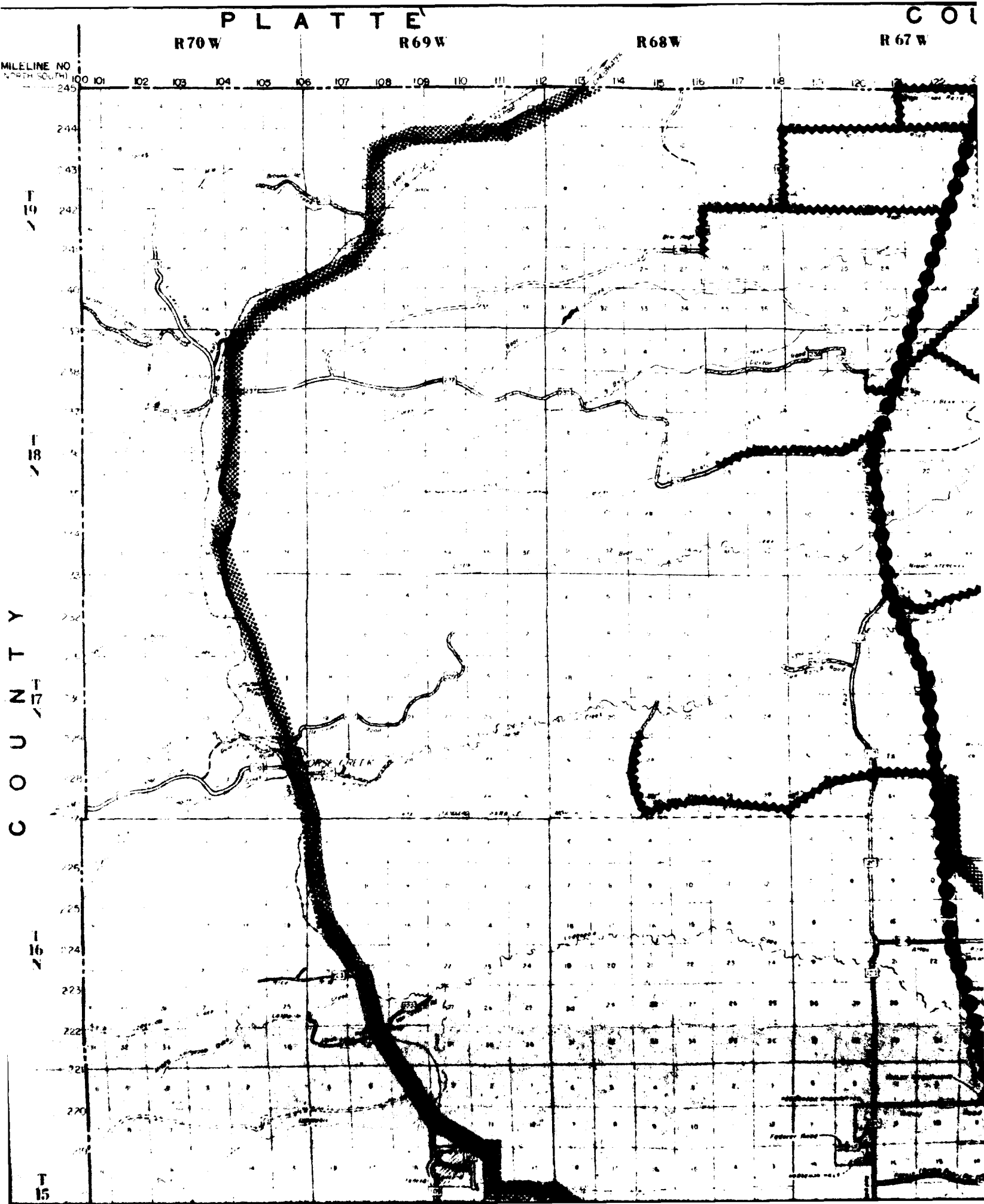
15











COUNTY

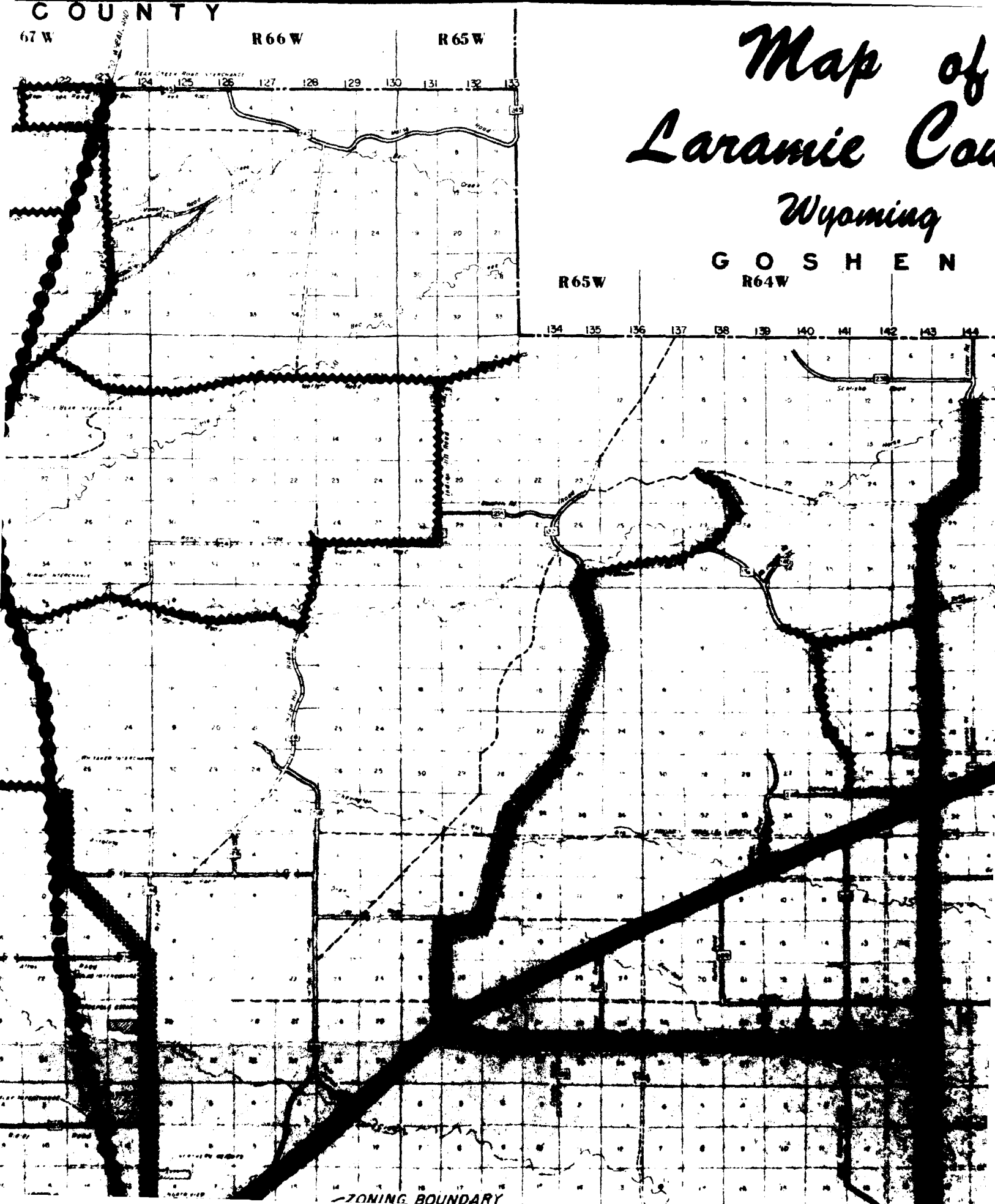
67 W

R66 W

R65 W

# Map of Laramie County Wyoming

G O S H E N  
R65 W  
R64 W



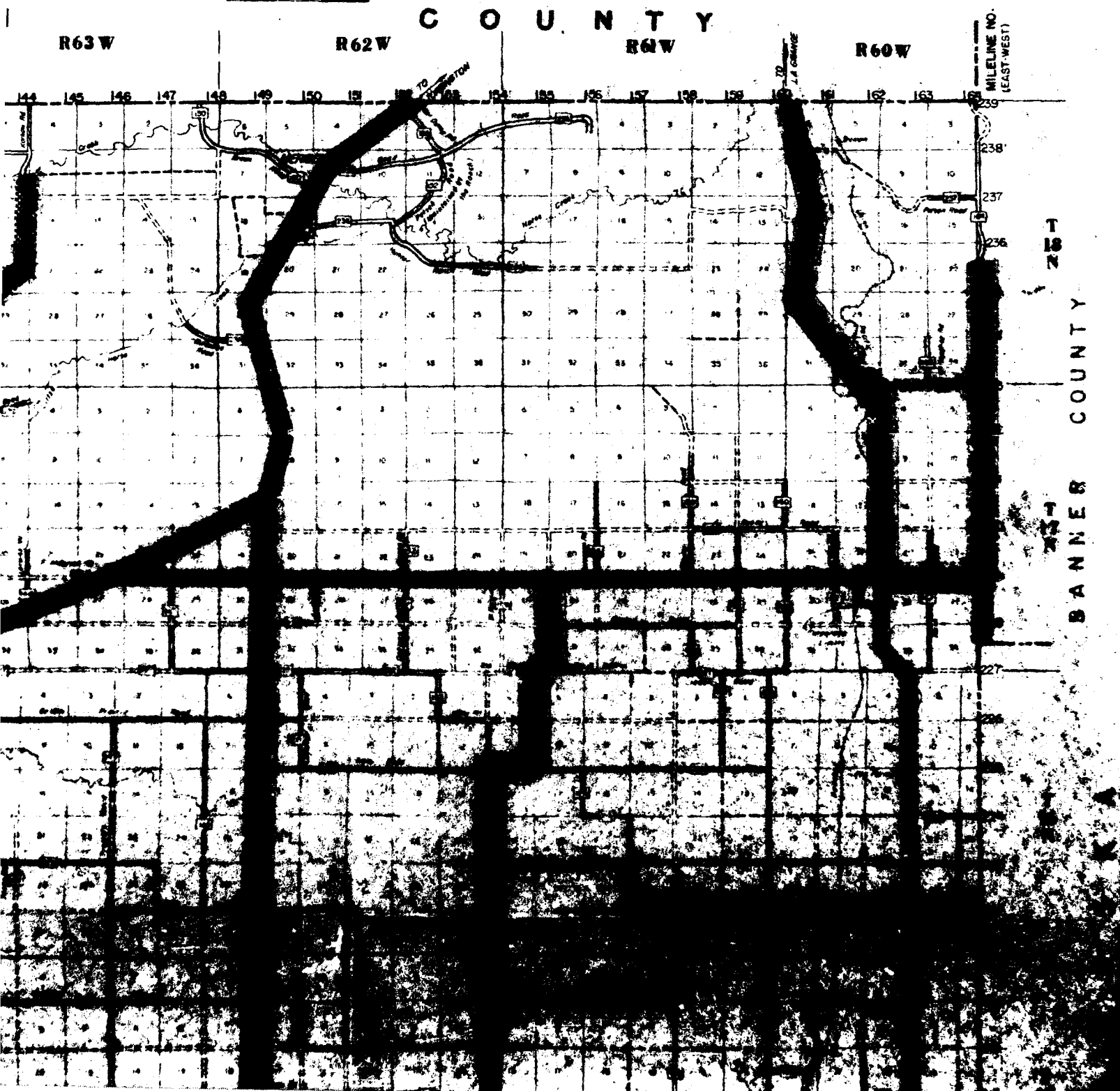
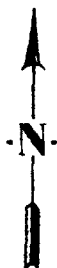
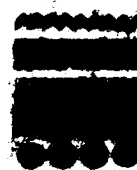
*County*

# COUNTY ROAD MAP OF LARAMIE COUNTY, WYOMING

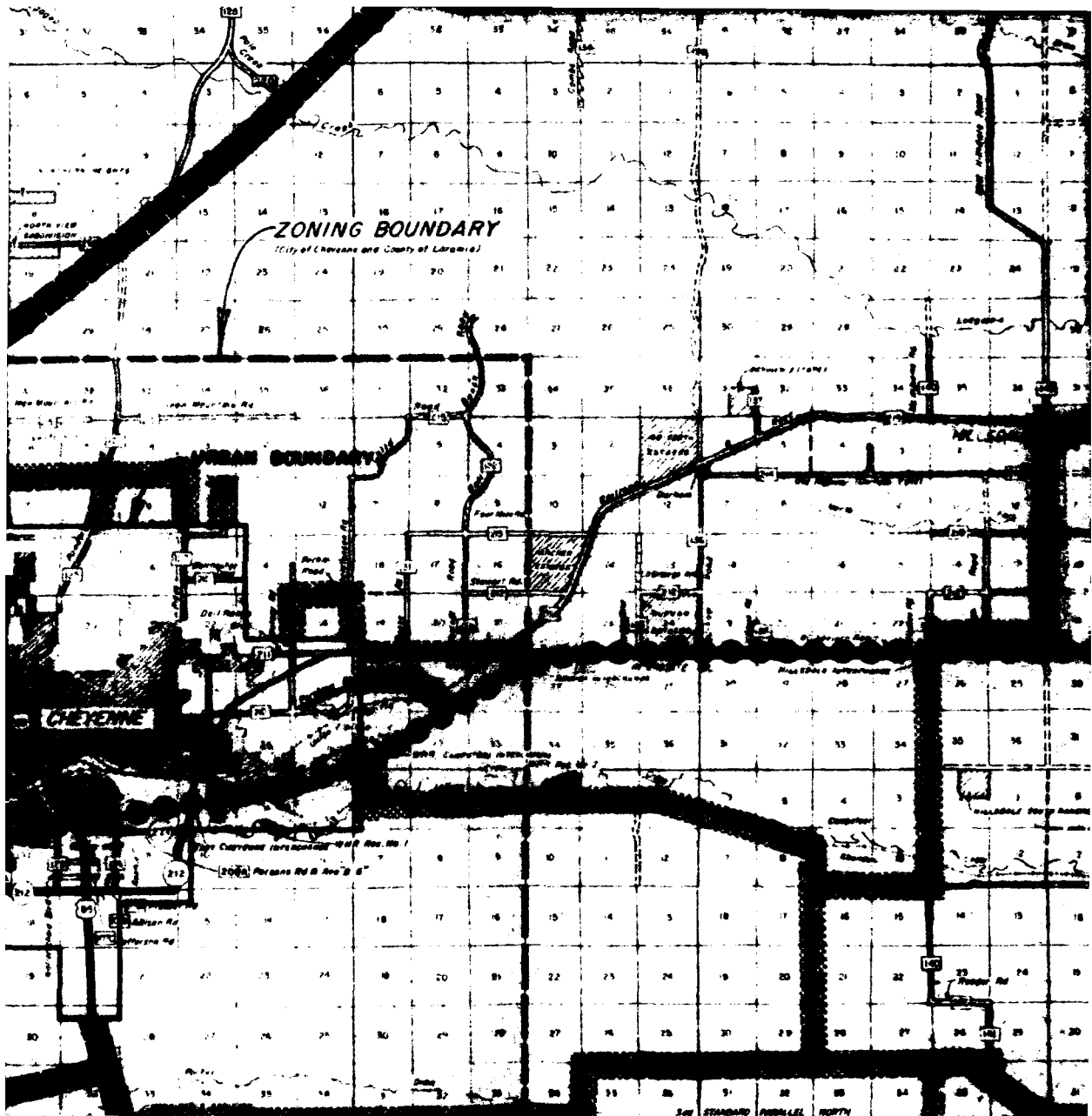
## LEGEND

- Interstate Highway
- State Highway
- County Maintained Road
- Declared County Roads:
  - Paved Road
  - Graded & Drained Road
  - Graded Road, Low Type
  - Primitive Road
  - Undeveloped Road

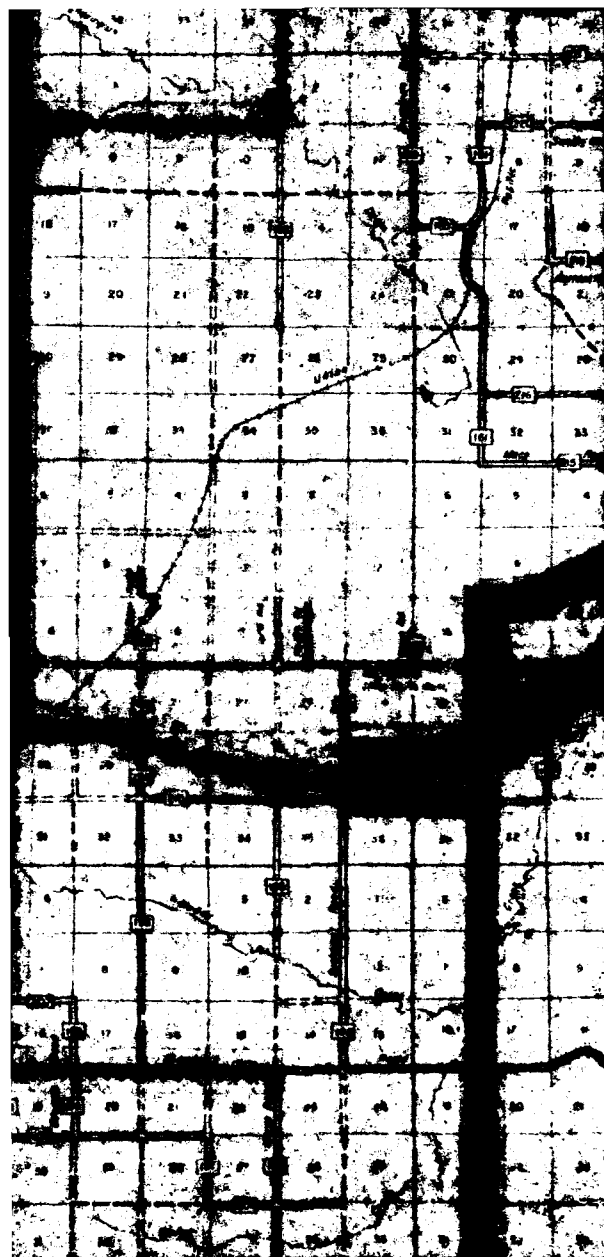
- T/E Route
- Minor Collector (County)
- Major Collector (State)
- Minor Arterial (State)
- Interstate



C O U N T Y







PLATTE

COUNTY

R70W

R69W

R68W

R67W

LELINE NO  
ORTH-SOUTH

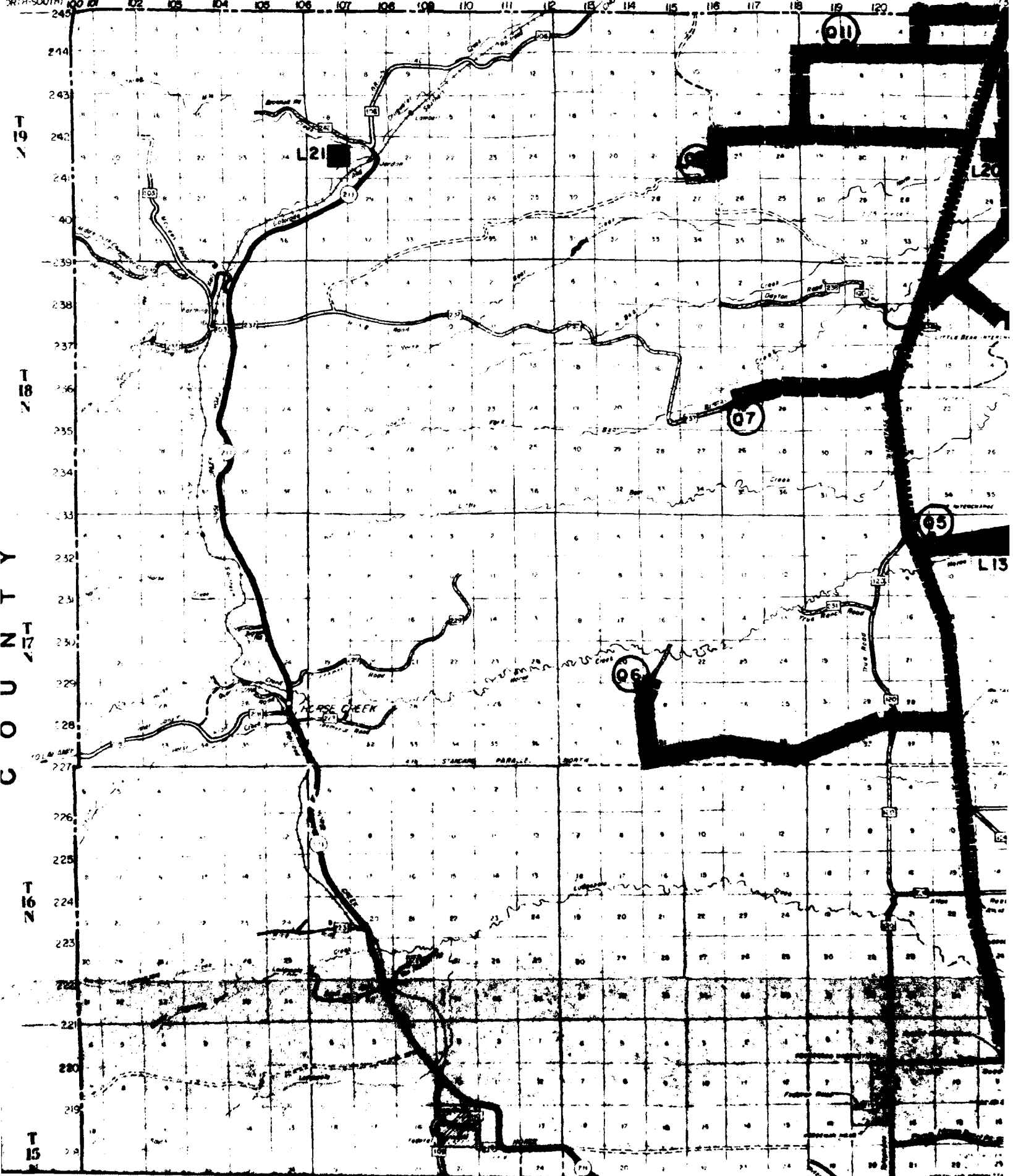
T 19 N

T 18 N

T 17 N

T 16 N

T 15 N



COUNTY

57 W

R 66 W

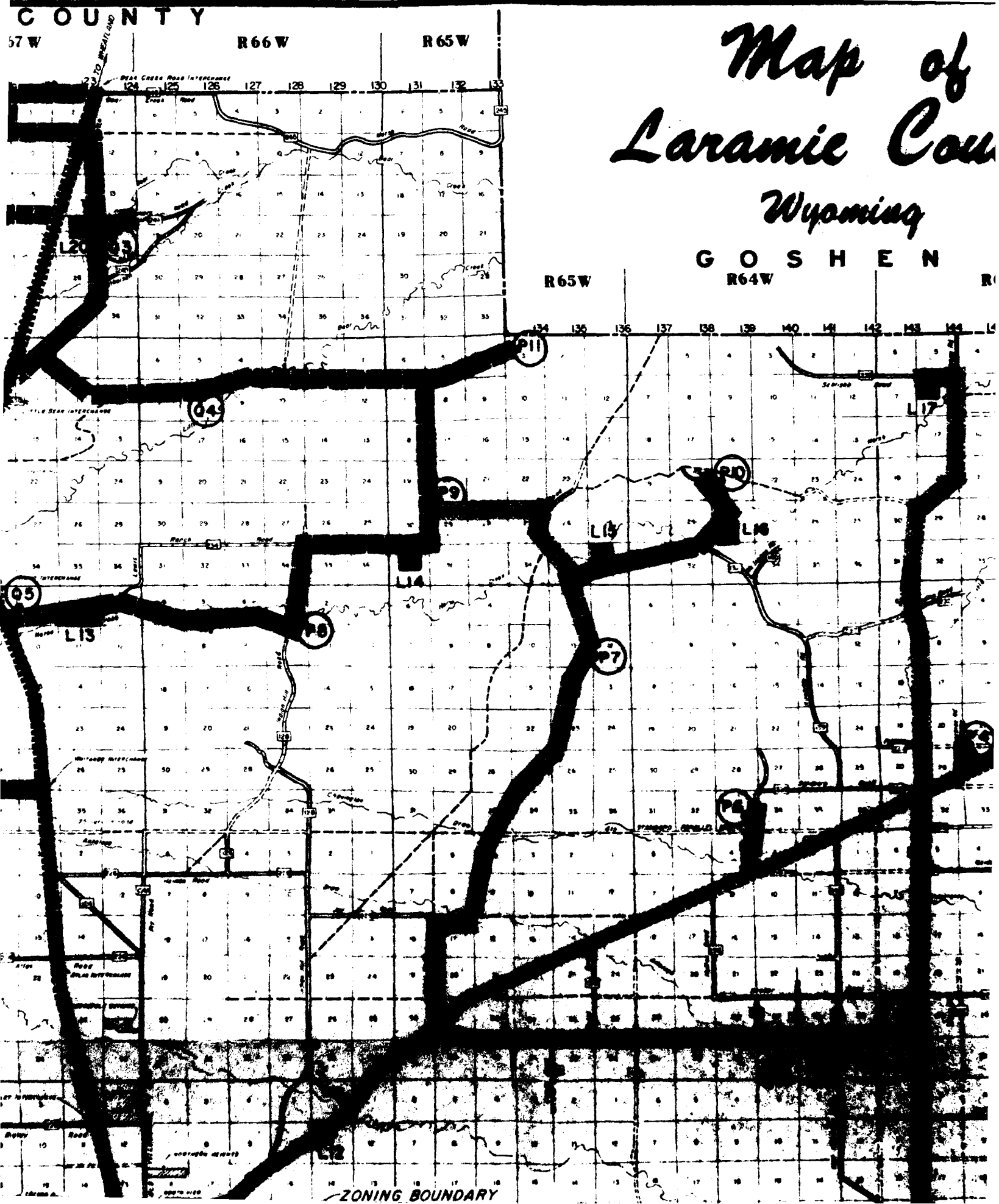
R 65 W

# Map of Laramie County Wyoming

G O S H E N

R 65 W

R 64 W



ZONING BOUNDARY

County

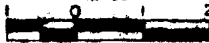
3

# COUNTY ROAD MAP OF LARAMIE COUNTY, WYOMING

## LEGEND

- From State/Fed Hwy to State/Fed Route via County Road
- State/Fed Hwy Access
- Gravel Pit Access to State/Fed Hwy (Primary)
- Gravel Pit Access to State/Fed Hwy (Secondary)
- Missile Site
- Gravel Pit

SCALE  
Miles



C O U N T Y

R63W

R62W

R61W

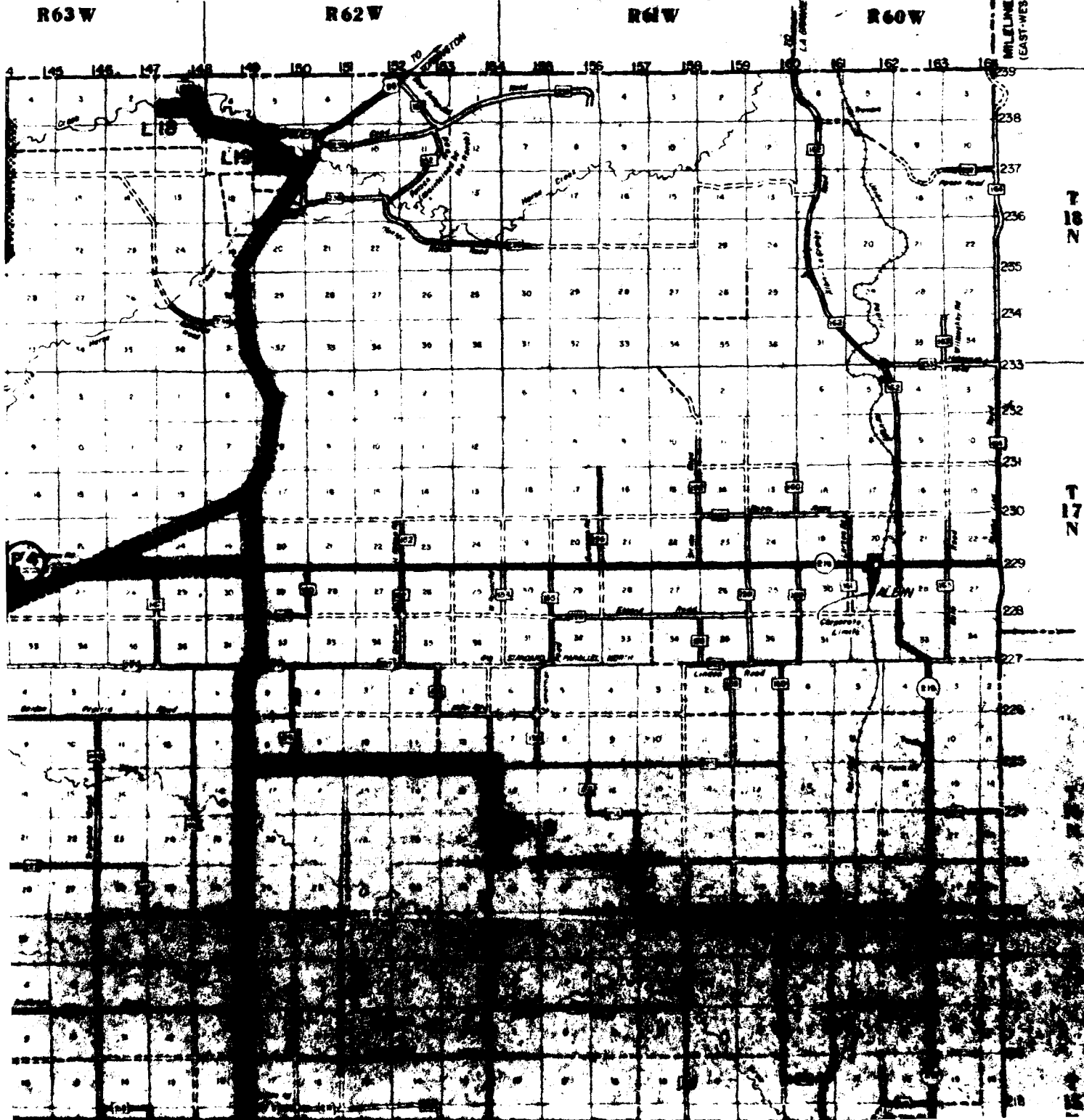
R60W

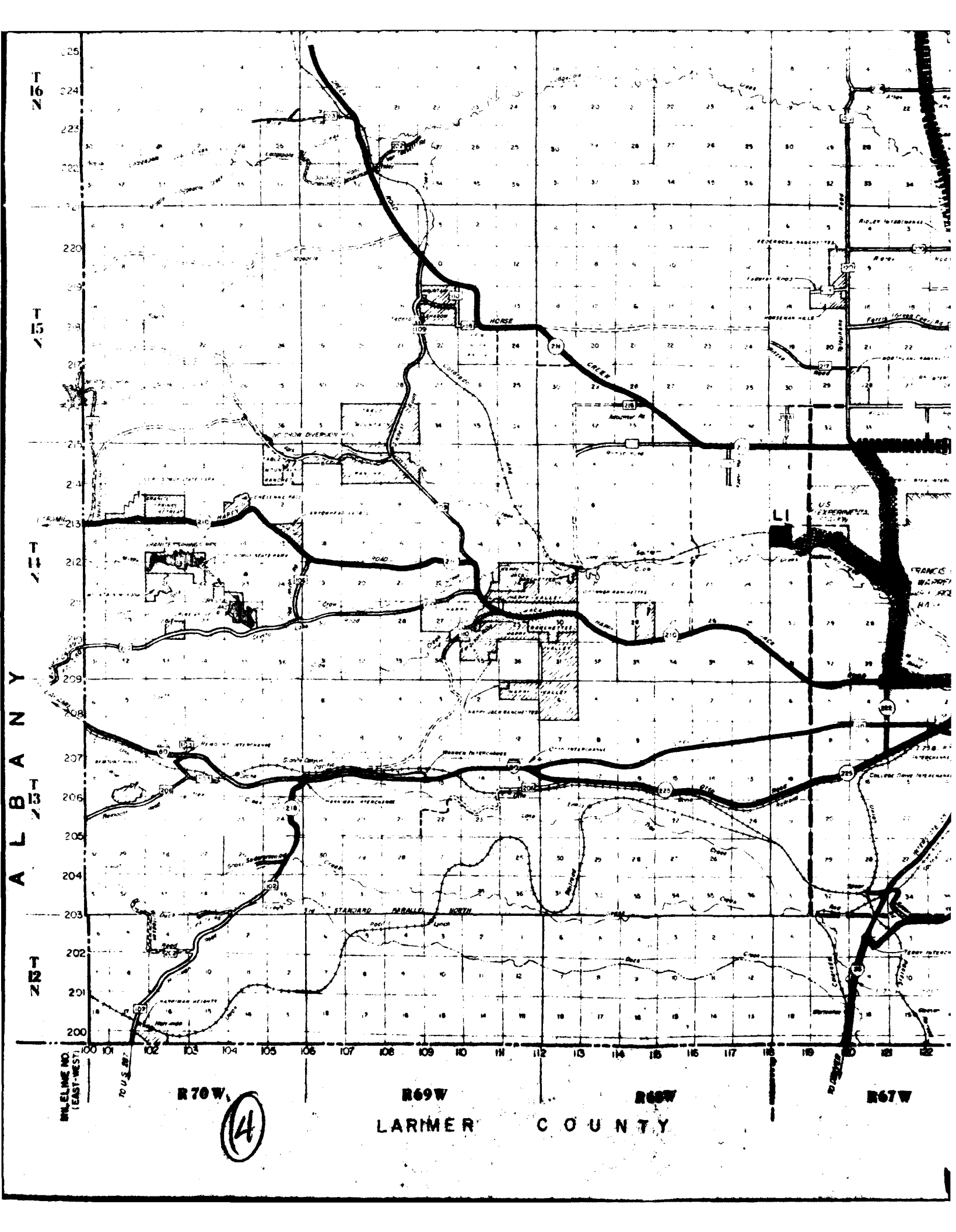
MILELINE NO.  
(EAST-WEST)

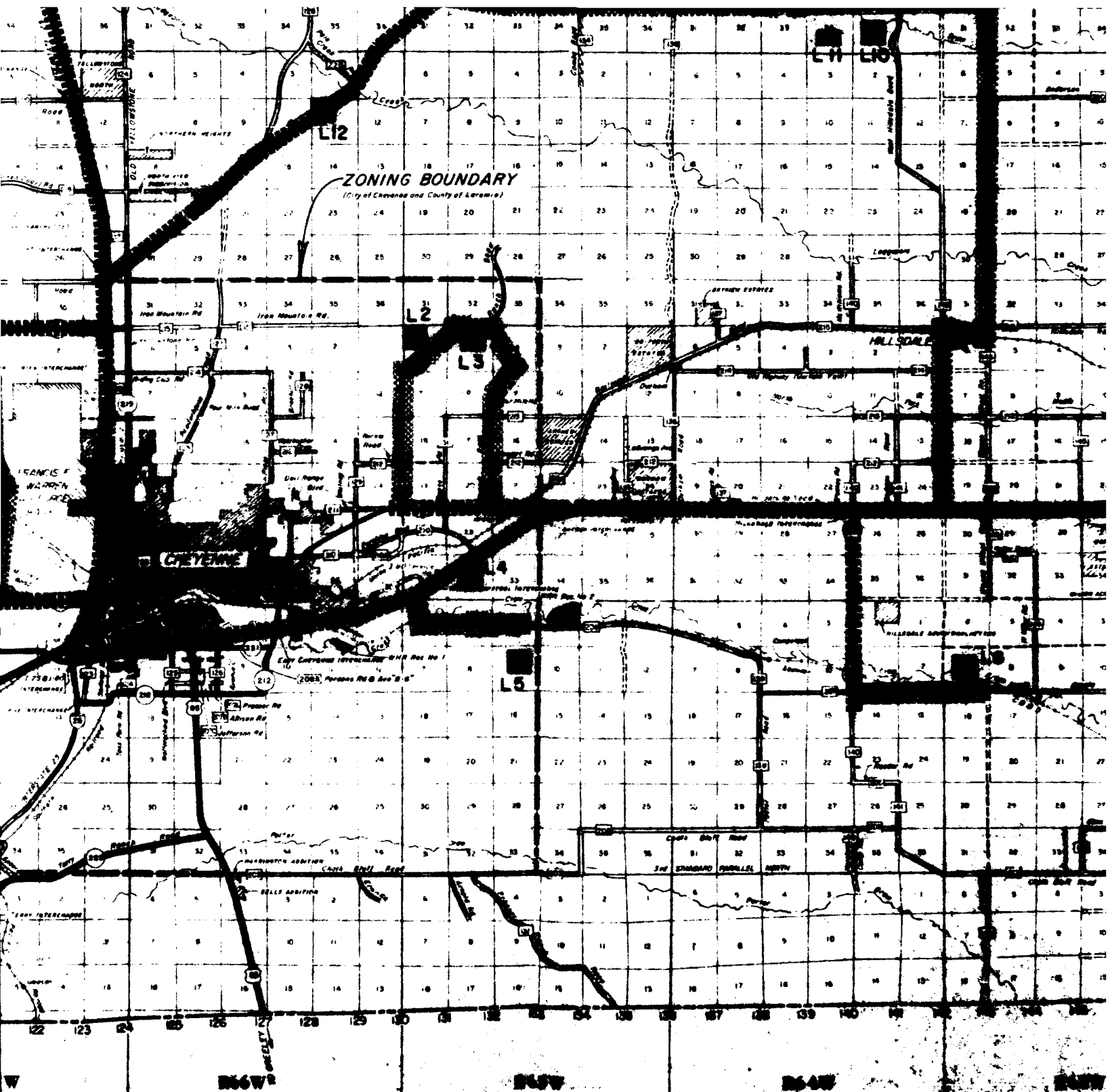
T 18 N

T 17 N

BANNER COUNTY

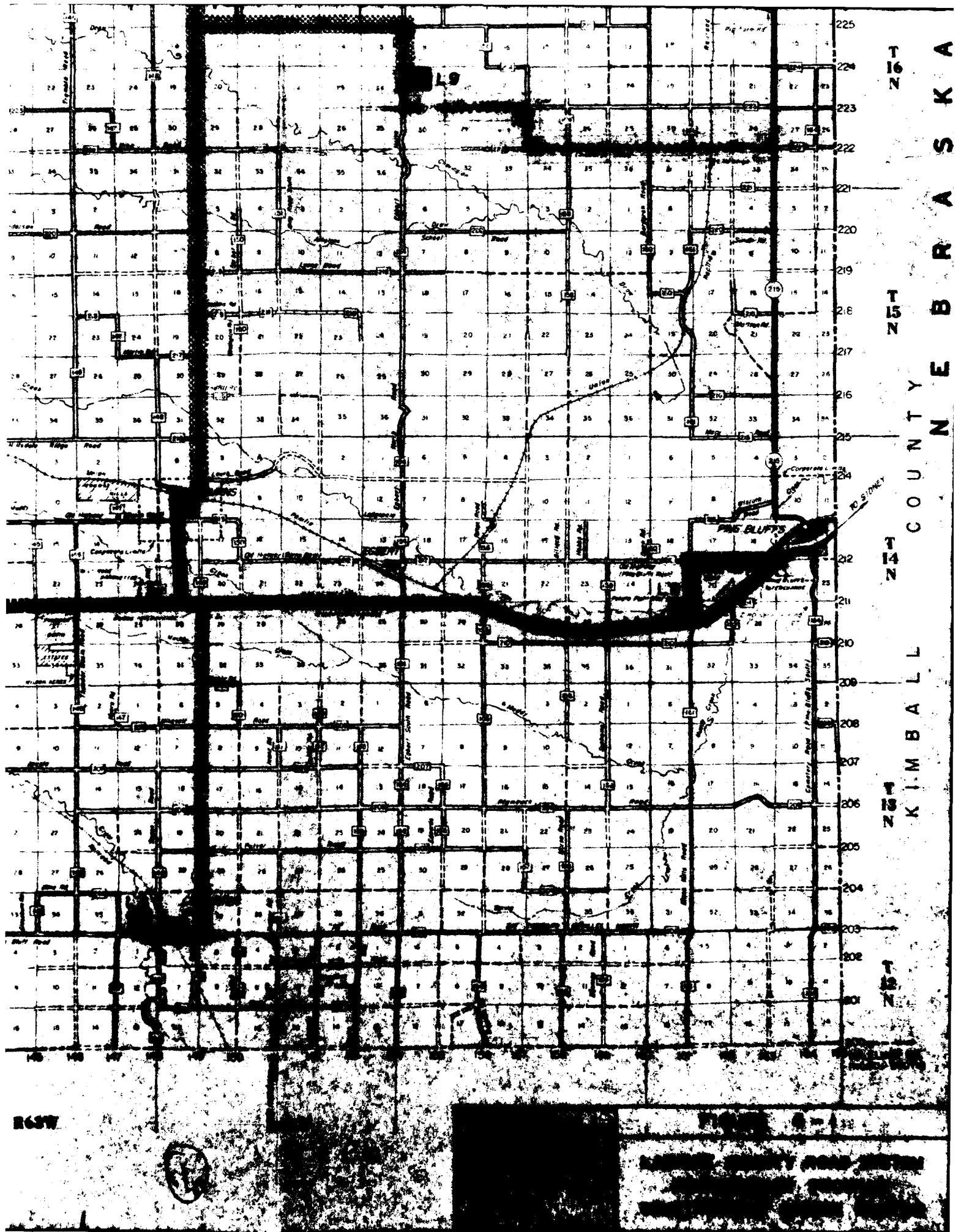






6

COLORADO



R65W

FIGURE 2 - 132